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Ongoing Monitoring Report (March 2021 to May 2023)

PFAS OMP- RAAF Base Amberley

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Abbreviations / Acronyms

Abbreviation / Acronym	
AFFF	Aqueous film forming foam
AHD	Australian height datum
AIR	Annual Interpretive Report
ANZECC	Australia New Zealand Environmental Conservation Council
ASC NEPM	Assessment of Site Contamination National Environment Protection Measure 1999 (as amended 2013)
BoM	Bureau of Meteorology
CPSA	Confirmed primary source area
CSM	Conceptual site model
Defence	Department of Defence
DO	Dissolved oxygen
DOC	Dissolved organic carbon
DoH	Department of Health
DP	Discharge point
DQOs	Data quality objectives
DSI	Detailed site investigation
EC	Electrical conductivity
Eh	Oxidation reduction potential
ERA	Ecological risk assessment
FTA	Fire training area
HEPA	Heads of Environmental Protection Agencies
HHRA	Human health risk assessment
LOR	Limit of reporting
NA	Not applicable
NEMP	National Environmental Management Plan
NEPC	National Environment Protection Council
NHMRC	National Health and Medical Research Council
OMP	Ongoing Monitoring Plan
OMR	Ongoing monitoring report
PFAS	Per- and poly-fluoroalkyl substances
PFHxS	Perfluorohexane sulfonate
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonate
PMAP	PFAS Management Area Plan
QA/QC	Quality Assurance / Quality Control
RAAF	Royal Australian Air Force

Abbreviation / Acronym	
RAP	Remediation action plan
SAQP	Sampling analysis and quality plan
STP	Sewage treatment plant
TOC	Total organic carbon
TSS	Total suspended solids
UST	Underground storage tank

PFAS Group	Compound	CAS No.
Perfluoroalkyl Sulfonic Acids	Perfluorobutane sulfonic acid (PFBS)	375-73-5
	Perfluoropentane sulfonic acid (PFPeS)	2706-91-4
	Perfluorohexane sulfonate (PFHxS)	355-46-4
	Perfluoroheptane sulfonic acid (PFHpS)	375-92-8
	Perfluorooctane sulfonate (PFOS)	1763-23-1
	Perfluorodecane sulfonic acid (PFDS)	335-77-3
Perfluoroalkyl Carboxylic Acids	Perfluorobutanoic acid (PFBA)	375-22-4
	Perfluoropentanoic acid (PFPeA)	2706-90-3
	Perfluorohexanoic acid (PFHxA)	307-24-4
	Perfluoroheptanoic acid (PFHpA)	375-85-9
	Perfluorooctanoic acid (PFOA)	335-67-1
	Perfluorononanoic acid (PFNA)	375-95-1
	Perfluorodecanoic acid (PFDA)	335-76-2
	Perfluoroundecanoic acid (PFUnDA)	2058-94-8
	Perfluorododecanoic acid (PFDoDA)	307-55-1
	Perfluorotridecanoic acid (PFTrDA)	72629-94-8
	Perfluorotetradecanoic acid (PFTeDA)	376-06-7
Perfluoroalkyl Sulfonamides	Perfluorooctane sulphonamide (FOSA)	754-91-6
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2
	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6
(n:2) Fluorotelomer Sulfonic Acids	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4
	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2
	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0

Units

Abbreviation	Term	Abbreviation	Term
GWE	Groundwater Elevation	°C	Degrees Celsius
Kg	Kilogram	m AHD	Metres Australian Height Datum
km	Kilometre	m bTOC	Metres below Top of Casing
km^2	Kilometre squared	mg	Milligram
mV	Millivolt	mg/L	Milligram per litre
L	Litres	mbgl	Metres below ground level
m	Metre	µS/cm	Micro-Siemens per centimetre
mm	Millimetre	SWL	Standing Water Level
cm	Centimetre	µg	Microgram
Ha	Hectare	µg/L	Microgram per litre

Executive Summary

Introduction

AECOM Australia Pty Ltd (AECOM) was engaged by the Department of Defence (Defence) to implement the Ongoing Monitoring Plan (OMP) (Defence 2020) for monitoring of per- and poly-fluoroalkyl substances (PFAS) at Royal Australian Air Force (RAAF) Base Amberley (the Base), located in Queensland, as outlined in the PFAS Management Area Plan (PMAP) (Defence, 2020)[1].

The OMP outlines the rationale and scope for the monitoring of concentrations and extent of PFAS in groundwater, surface water and sediment originating from the Base. The OMP was implemented within the RAAF Base Amberley Management Area. The Management Area (as shown in **Figure 1**, **Appendix A**) includes the Base as well as encompassing off-Base areas adjacent to Bremer River and Warrill Creek.

Objective

The objective of the ongoing monitoring program, as outlined in the OMP, is to assess changes in the nature and extent of PFAS within the environment. The OMP uses the monitoring network developed as part of the PMAP to monitor the amount of PFAS leaving the Base through groundwater or surface water. The PMAP was designed to target areas where there is a potentially elevated risk to a receptor (for example, to people or an ecological environment) associated with Defence's historical use of legacy PFAS containing aqueous film forming foam (AFFF).

Monitoring Scope

AECOM completed biannual monitoring of groundwater, surface water and sediment between March 2021 and May 2023 in general accordance with the most recent version of the sampling, analysis and quality plan (SAQP) (AECOM, 2023b) applicable at the time the sampling was completed, with deviations from the SAQP outlined in **Section 3.2**. The monitoring program consists of biannual monitoring events at the end of the wet season (March/April 2021, March/April 2022 and April/May 2023) and at the end of the dry season (October/November 2021 and October 2022). Sampling under these different climatic conditions provides a better understanding of the movement and concentrations of PFAS in the environment.

Groundwater samples could not be collected during the monitoring period from six of the monitoring wells, as the wells were destroyed (MW015, MW039, MW040 and MW056) or damaged (MW008 and MW009). Up to two monitoring wells during each sampling event could not be accessed due to dense vegetation.

The loss of these groundwater monitoring wells reduces information available on changes in the nature and extent of PFAS in groundwater adjacent to and down-gradient of three confirmed potential source areas (CPSA), CPSA A (former topside aviation fire training area), CPSA M (fuel farm 1 and triple interceptor pit) and CPSA Y (former secondary fire training area).

What is an 'order of magnitude'?

This refers to something decreasing or increasing by multiples of ten. For instance, an increase from 10 to 100 is an order of magnitude increase. When assessing changes in PFAS concentrations at an individual location, all concentrations are considered when determining trends, but order of magnitude changes are discussed separately as they represent a significant change in concentrations from what was reported in the previous event.

If a change is close to established health or environmental criteria, it will also be considered significant.

[1] The PMAP is publicly available at Publications : Amberley : Department of Defence. The OMP can be found within the PMAP report as Attachment 1.

Interpretive Assessment

Data collected during the March 2021 to May 2023 monitoring period was compared to historical data for the included sampling locations (refer to historical data tables in **Appendix B)**. Concentrations were generally consistent and within the historical data ranges (AECOM, 2021b)[2] for most wells. This means that concentrations are generally stable across the Management Area and varied by less than an order of magnitude, up or down, from previous monitoring events.

The current monitoring network is considered adequate to monitor PFAS in groundwater, surface water runoff and sediment, and to provide early detection of significant changes in migration at most of the potential source areas. Due to the loss of six wells, replacement wells are required to provide information down-gradient of three source areas, CPSA A, M and Y to provide greater certainty in interpreting the nature of PFAS.

Groundwater Results

Groundwater Flow Direction

A groundwater aquifer is an underground layer of porous and permeable rock, gravel, sand or silt, which can contain or transmit groundwater. There are two groundwater aquifers that are monitored at Amberley: Alluvium-Tertiary Formation and Wallon Coal Measures. The Walloon Coal Measures aquifer is present at surface along the western boundary of the Base and underlies the Alluvium-Tertiary Formation aquifer at other locations.

The groundwater flow direction in the shallow aquifer during the five sampling events was similar. Groundwater flows in multiple directions from the central western portion of the Base, towards Bremer River and Warrill Creek flowing northeast, east and southeast. Groundwater flowing outwards in multiple directions from a single area where there is elevated groundwater is referred to as radial.

The groundwater contours in the deeper aquifer during the five sampling events were also similar, with groundwater flowing from west to east. This is generally consistent with previous investigations and monitoring rounds.

PFAS Concentrations

The groundwater monitoring results do not suggest a change in the understanding of contamination or risk within the Management Area. The following was observed:

- PFAS concentrations in groundwater and the inferred extent of PFAS in groundwater were similar to previous results. The highest concentration of sum of PFOS and PFHxS[3] in groundwater was recorded at MW046 located adjacent to, and down-gradient of the AFFF Wastewater Holding Tank, which is an on-Base source area. Results for this well during the monitoring period were within the historical ranges.
- The results indicate stable concentrations at, or down-gradient of most source areas. New maximum PFAS concentrations were observed in some Base boundary monitoring wells including:
    - MW030 located along the central western Base boundary close to confirmed primary source area (CPSA) W (Fire Fighting Training School). The sum of PFOS and PFHxS concentration increased during the monitoring period from 3.4 µg/L in 2021 to 12.9 µg/L in April/May 2023. The potential for migration of PFAS in groundwater towards the west is uncertain as there are no monitoring wells to the west of MW030.
    - MW057S is adjacent to the southeastern Base boundary next to Warrill Creek. The sum of PFOS and PFHxS concentration was 2.6 µg/L in October/November 2022 (a first-time exceedance of recreational water guideline value[4]) compared to the previous maximum concentration of 0.1 µg/L in 2021. The increase was temporary, as a lower concentration was reported (1.3 µg/L) in the sample collected in April 2023. As there are no wells further down-gradient (to the east), the extent of PFAS in groundwater in this area is uncertain. The increase

[2] The historical data range is presented within the 2020 Annual Interpretive Report (AECOM, 2021b) publicly available at Publications : Amberley : Department of Defence
[3] PFOS is perfluorooctane sulfonate. PFHxS is perfluorohexane sulfonate.
[4] The recreational water use guideline value for sum of PFOS and PFHxS is 2.0 µg/L. The guideline value is identified in the PFAS National Environmental Management Plan (NEMP) (HEPA, 2020).

is potentially a seasonal effect due to the high rainfall that occurred in 2022 and potential interaction between surface water in Warrill Creek and groundwater in the shallow aquifer.

  - MW054S is adjacent to the southern Base boundary next to Warrill Creek. The sum of PFOS and PFHxS concentration was 0.4 µg/L in both October/November 2022 and April/May 2023 compared to the previous maximum concentration of 0.14 µg/L in 2021. The increase is potentially a seasonal effect due to the high rainfall that occurred in 2022 and potential interaction between surface water in Warrill Creek and groundwater in the shallow aquifer.

- Variable PFAS concentrations have been detected in monitoring well MW020, located in the central portion of the Base, down-gradient of CPSA Z (fuel underground storage tank with AFFF listing). Concentrations increased in post-wet season monitoring events in 2021, 2022 and 2023 with PFAS concentrations doubling each year. The reason for the increase has not been verified. The localised extent of PFAS is uncertain as there are no nearby down-gradient wells due to the presence of the operational runways with the nearest down-gradient wells approximately 1.5 km to the east-south-east.

The new maximum concentrations may relate to the wetter conditions in 2022, where approximately twice the annual rainfall occurred, compared to the long-term average. The extent of PFAS in groundwater down-gradient of these monitoring wells is uncertain as there are no wells further down-gradient. If increasing concentrations trends are confirmed in future sampling events (October 2023 and April 2024), additional monitoring wells may be required to delineate the extent of PFAS down-gradient of these locations. Ongoing monitoring at these locations will establish the longer-term PFAS trends.

Surface Water and Sediment

PFAS concentrations in surface water and sediment sampling locations were generally similar to previous historical results (AECOM, 2021b).

With minor exception, there were no first-time detections or new exceedances of guideline values detected in surface water during the 2021 to 2023 monitoring period at the RAAF Amberley Management Area[5].

The sum of PFOS and PFHxS concentration at SW033 (an on-Base drain) increased by an order of magnitude higher than the historical range within the 2021 monitoring period. The concentration decreased during 2022 and 2023 sampling events. Surface water location SW033 is located on-Base within a known PFAS source area and no clear seasonal variations were apparent. PFAS concentrations within known on-Base source areas typically show fluctuations. Ongoing monitoring at this location will establish any long-term trend.

Concentrations of PFAS in surface water vary between locations and over time; however, a review of PFAS concentrations graphed over time does not indicate any trends for PFAS concentrations (i.e., no clear linkage between the season of monitoring and increasing or decreasing PFAS concentrations). PFAS concentrations will continue to be monitored and graphed over time to assess any potential trends or variations in surface water.

There was one first-time detection of PFOA[6] in the sample from SW026 in October/November 2022, however, other PFAS (e.g., PFOS) have been consistently detected at this location. There was one new exceedance of the recreational water guideline value for sum of PFOS and PFHxS in the sample from SW094, located along the Bremer River in April 2022 (2.3 µg/L). However, PFAS were not detected at this location in the sample collected in October 2022. No locations further downstream exceeded the recreational water guideline value during the monitoring period. The Queensland Government has issued health advice on their website[7] advising people not to consume fish caught in Bremer River and

[5] There was a first-time detection of PFOA in SW026 (0.02 µg/L in October/November 2022, however PFOS and PFHxS have been consistently detected at this sampling location. There was a first-time exceedance of the sum of PFOS and PFHxS recreational water guideline value (HEPA, 2020) at SW094 in March/April 2022, however, the concentration in subsequent sampling events did not exceed the guideline value. Sampling location, SW304, an on-Base drain was sampled for the first-time in April 2023 and the concentration of sum of PFHxS and PFOS exceeded the recreational water guideline value. Concentrations of PFOS and PFOA also exceeded the ecological guideline values.

[6] PFOA is perfluorooctanoic acid

[7] Ipswich | Environment, land and water | Queensland Government (www.qld.gov.au)

Warrill Creek adjacent to RAAF Base Amberley and the location of SW094 is unlikely to be used for recreational purposes.

Sediment samples were co-located with surface water samples. During the monitoring period, there were nine first-time detections in sediment, with PFOA detected in six samples (SD004, SD009 and SD020, located along Warrill Creek, SD045 along Bremer River and SD038 and SD304 along on-Base drains) and sum of PFOS and PFHxS detected in five samples at SD089 and SD091 (located along Bremer River) and SD025 (upstream Bremer River) and SD038 and SD304 (on-Base drains) resulting in new maximums for the historical range within the monitoring period.

The concentration ranges for PFAS in sediment from creek locations were generally consistent with historical data. New maximum sum of PFOS and PFHxS concentrations in sediment were recorded in two-thirds of the drain sampling locations during the monitoring period and may reflect increased transport of sediment along drains due to the wetter conditions during 2022. Guideline values have not been established for PFAS in sediment. Although new maximum concentrations have been recorded during the monitoring period, the distribution of PFAS in sediment within the Management Area is similar to historical results and the risk profile is unchanged.

Risk Summary

The conceptual site model was reviewed considering the new monitoring data collected over the monitoring period from 2021 to 2023, and no changes were identified to sources, pathways or receptors at the Base or within the Management Area to change the risk profile, as described in the CH2M Hill (2018) and 2020 Annual Interpretive Report (AIR) (AECOM, 2021b). Due to the loss of on-Base wells and concentration increases in groundwater at some boundary locations there are some uncertainties regarding the lateral extent of PFAS beyond the Base boundary.

The data collected during the ongoing monitoring program suggest that the risk profile to human health and ecological receptors within the Base and the larger Management Area is unchanged, based on the following conclusions of the data assessment:

- The extent of PFAS in groundwater is generally similar to that presented in the detailed site investigation (DSI) (CH2M Hill, 2018) and monitoring event reports (CH2M Hill, 2020a, b, AECOM 2021b). The dataset indicates broadly steady PFAS concentrations at, or down-gradient of most source areas.
- PFAS analytical results for most individual monitoring wells were within historical ranges. Some wells at boundary monitoring locations have shown variability in PFAS concentrations. New maximum PFAS concentrations were identified at three boundary locations, along the central western boundary (MW030), and two locations along the southern and southeastern Base boundary (MW054S and MW057S). The extent of PFAS in groundwater is uncertain beyond these locations as there are no further down-gradient wells. Ongoing monitoring will verify the nature of these changes and inform if further monitoring points are required down-gradient of these locations.
- Although minor fluctuations in PFAS concentrations in surface water samples were reported, the results were typically within the range of historical results.
- PFAS concentrations in most sediment samples from creeks showed similar concentrations to previous years. PFAS concentrations in sediment in some on-Base drains have shown fluctuations in 2022 attributed to wetter weather and increased surface water flows, however, the overall distribution is considered unchanged.

Conclusions

Following a review of the data collected during the monitoring period, some uncertainties have been identified regarding the lateral extent of PFAS in groundwater down-gradient of source areas and boundary locations. Although no changes have been identified to the understanding of risks associated with the nature and extent of PFAS in the RAAF Base Amberley Management Area, additional data would need to be collected to address the uncertainties and meet the objectives of the SAQP and OMP.

Overall, the concentrations of PFAS across the different sample types and locations are consistent and of the same order of magnitude as historical data. Given the remaining PFAS concentrations at the on-

Base source areas, it is recommended that the ongoing monitoring program of groundwater, surface water and sediment is continued to monitor the extent of PFAS, potential migration and any associated risk changes.

1.0 Introduction

AECOM Australia Pty Ltd (AECOM) was engaged by the Department of Defence (Defence) to implement the per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Plan (OMP) (Defence, 2020) at the Royal Australian Airforce (RAAF) Base Amberley (the 'Base') and Management Area. The locations of the Base and Management Area are shown in **Figure 1**, **Appendix A**.

To meet the objectives of the OMP, the monitoring was undertaken in accordance with the most recent version of the *Sampling Analysis and Quality Plan* (SAQP) (AECOM, 2021a, 2022b, c, 2023b) in place at the time of sampling. The most recent version of the SAQP for April /May 2023 is provided in **Appendix E**.

This Ongoing Monitoring Report (OMR) has been prepared in general accordance with the Defence (2022) *PFAS OMP Annual Interpretive Report Guidance* (Version 0.4) issued in October 2022 (Defence, 2022). The report summarises the results of the monitoring completed in the monitoring period from March 2021 to May 2023 (hereafter referred to as "the monitoring period").

1.1 Purpose and Objective

The objective of the OMP is to set out a program of monitoring to continue to assess the changes in the nature and extent of PFAS within the environment, where Defence's historical use of legacy aqueous film forming foam (AFFF) has led to an identified potentially elevated risk to a receptor, or potential future risk to a receptor within the Management Area.

The OMP (Defence, 2020) aims to achieve the following:

- An evidence base for targeted and effective risk management of PFAS contamination to protect human health and environmental receptors
- An early indication that additional management of PFAS contamination may be warranted in areas not currently affected by PFAS.

The data will assist in the timely identification of risks and inform Defence's approach to the management of PFAS, including updates and revisions to the PFAS Management Area Plan (PMAP) (Defence, 2020).

1.2 Scope of Work

The scope of work for this OMR is to assess changes to the nature and extent of selected PFAS over the monitoring period and evaluate if these changes have implications for the understanding of the conceptual site model (CSM) and the risk profile with respect to PFAS impacts at the RAAF Base Amberley Management Area. The locations of confirmed primary source areas (CPSAs) are shown in **Figure 2**, **Appendix A**.

The scope of work included the evaluation of data reported in the following factual reports, which are included in **Appendix F**:

- *Sampling Event Factual Report, March/April 2021 – PFAS OMP – RAAF Base Amberley*, February 2022 (AECOM, 2021c).
- *Sampling Event Factual Report, October 2021 – PFAS OMP – RAAF Base Amberley*, February 2022 (AECOM, 2022a).
- *Sampling Event Factual Report, March/April 2022 – PFAS OMP – RAAF Base Amberley*, September 2022 (AECOM, 2022d).
- *Sampling Event Factual Report, October/November 2022 – PFAS OMP – RAAF Base Amberley*, January 2023 (AECOM, 2023a).
- *Sampling Event Factual Report, April/May 2023 – PFAS OMP – RAAF Base Amberley*, June 2023 (AECOM, 2023c – in draft and therefore not included in **Appendix F**).

AECOM also compared data presented in this OMR to the data presented in the 2020 Annual Interpretive Report (AIR) (AECOM, 2021b).

2.0 Site Setting

2.1 Base Description and Setting

Table 1 provides a summary of the Base identification and setting, as presented in the PMAP (Defence, 2020).

Table 1 Base identification and setting summary (Defence, 2020)

Element	Description
Base ID	0861
Base Location	The Base is located at Southern Amberley Road, Amberley, Queensland approximately 7 kilometres (km) west of Ipswich and 50 km southwest of Brisbane. The Base consists of 716 property lots. The facility occupies approximately 2,030 hectares (ha) and includes the Base itself (**Figure 1** in **Appendix A**) and several parcels of Defence-owned land to the east and south of the Base. Approximately 1,600 ha are used for operational purposes with the remaining 430 ha leased for agricultural or commercial use.
Regional Climate	The climate in the Amberley area is warm and temperate with annual average day-time temperatures ranging from 21°C in July to 31°C in January. There is a wet season from December through to March, with the months from April to November being relatively dry.
Topography	The Base is mostly located in the floodplains of the Bremer River, and Purga and Warrill Creeks. The runways, taxiways and hangars are located below the 30 m Australian Height Datum (metres AHD) contour line, within the flood plains, where the topography is very flat (with surface gradients of 0.003 to 0.005), in the eastern portion of the Base. In the central west of the Base, the topography rises above the floodplain to topographical highs of 50 m AHD in the south (south of Frog's Hollow Gully) and 60 m AHD in the west, at the Fire Fighting Training School. Most of the other operational areas and accommodation are located in the central western area, above the floodplains.
Geology	The following geological units are present at the Base: • Quaternary Floodplain Alluvium, comprising silt, gravel, and clay in the eastern and lower elevation portions of the Base. • Tertiary Formation consisting of claystone, siltstone, sandstone, and basalt in the west-central at higher elevation portions of the Base and basalt, in the northwestern-central and southwestern-central portions of the Base. • Jurassic Walloon Coal Measures comprising shale, siltstone, sandstone, and coal seams, cropping out along the western Base boundary. • Quaternary (Holocene) Terrace Alluvium, lowest river terrace comprising gravel, sand, silt and clay along Bremer River and Warrill Creek at the northern, southern, and eastern boundaries, respectively.
Hydrogeology	Water-bearing units underlying the Base include the Quaternary Floodplain Alluvium, Tertiary Formation, and the Walloon Coal Measures. The Alluvium and Tertiary Formation are connected and are considered a single hydrogeological unit. The detailed site investigation (DSI) (CH2M Hill, 2018) identified that there was hydraulic connection between the Alluvium-Tertiary Formation and underlying Walloon Coal Measures. The geological data indicated vertical and horizontal flow in the Walloon Coal Measures may be restricted by lower hydraulic conductivity zones between coal seams, which may mean flow in the Walloon Coal Measures is not

Element	Description
	continuous across the Base. Groundwater at the Base has generally been encountered at depths between 10 to 15 metres below ground level (mbgl). Groundwater flow in both the Quaternary-Tertiary Formation and the Walloon Coal Measures is predominantly from the higher elevation central-west areas of the Base north and east towards Bremer River and southeast towards Warrill Creek. Based on groundwater and surface water elevations within and adjacent to the Bremer River and Warrill Creek, the DSI (CH2M Hill, 2018) identified that these watercourses were potentially both gaining and losing streams depending on the watercourse reach and season. An ephemeral water body, Frog's Hollow Gully, is present in the southwest portion of the Base and connects with Warrill Creek at the Base boundary. Based on the climatic conditions and groundwater recharge there is a rise of the groundwater table during the wet season. This increase in water table elevation has the potential to increase contaminant migration towards the surface water bodies during the wetter months.
Surface Water	The Base and Management Area are within the Bremer River sub-catchment. The Bremer River sub-catchment covers approximately 2,036 square kilometres (km^2) and is a major sub-catchment of the Brisbane River catchment. The main watercourses in the Bremer River sub-catchment include the Bremer River, Purga Creek and Warrill Creek. Purga and Warrill Creeks run in a south-to-north direction and follow the southern boundary of the Base before joining the Bremer River to the east of the Base. The Bremer River flows from west-to-east and borders the northwest, northern and eastern extents of the Base. Warrill Creek originates 50 km southwest of the Base, with a catchment area of 920 km^2. Flow into Warrill Creek is partly controlled by the Moogerah Dam on Reynolds Creek, a tributary of Warrill Creek. The Bremer River enters the Brisbane River 8 km downstream and to the northeast of the Base.
Base Management Drainage	There is an extensive stormwater drainage system across the Base originally constructed in the 1940s with various upgrades over time. The drainage system comprises open, lined, and unlined drains, covered lined drains, underground drainpipes and grated lined drains to direct water from operational areas to discharge points off-Base. Discharge points for the drainage system to Bremer River and Warrill Creek and catchments are shown on **Figures 3** & **5**, **Appendix A**.
Current and Previous Land Use (including AFFF use)	European settlement occurred around 1826, coinciding with the discovery of limestone in the area. Historical land use post-settlement included, an aboriginal mission and some areas of cotton farming and livestock rearing. The property was purchased by the Commonwealth between 1865 and 1938 and was developed as an airfield in 1940. The current Base is an operational air force facility and operates two runways. The main runway runs approximately north to south, parallel to the eastern boundary. The second runway is shorter and runs southwest to northeast and is in the southern part of the Base. Parallel to the main runway is a taxiway that services both runways and provides access to the main hangars. Most of the operational areas, historical and current, are located to the west of the runways and taxiways. Operational areas where AFFF has or is being used (see **Figure 2** in **Appendix A**) include: • The main hangars for 1 Squadron, 6 Squadron and 38 Squadron which house fire suppression systems • The redeveloped fire training area pad and AFFF holding tank • The fire-fighter training school • Fuel facilities • Engine test facilities

Element	Description
	• Temporary stockpile facility for PFAS impacted soils.
Land uses surrounding the Base	Land to the north, south and west of the Base is surrounded largely by rural residential areas and several urban suburbs. Warrill Creek and Bremer River form part of the boundary of the Base to the south and north, respectively with Purga Creek to the southeast of the Base. The surrounding land is used for grazing, cropping, mining and small acreages/hobby farms. East of the Base, land use changes from rural to industrial and residential approaching the City of Ipswich. Residential development and parkland areas are present adjacent to the Bremer River, downstream of the Base. Kayaking, canoeing, fishing and swimming are popular recreational activities in the waterways east of the Base.

2.2 Management Area

The Management Area includes the Base as well as off-Base areas where potential risks have been identified that require management, refer to **Figure 1**, **Appendix A**.

In addition to the Base, the Management Area encompasses the following specific areas where potential human health or ecological risks were identified in the PMAP (Defence, 2020):

- Warrill Creek – this area comprises Warrill Creek riparian zone adjacent to the southern boundary of the Base and extends as far downstream as the point of confluence with the Bremer River. This area includes private properties adjacent to the Base along this stretch of the creek. Private properties that lie within this area are used for agriculture and rural residential purposes. Note: this represents the area previously referred to as Area 1 in the DSI (CH2M Hill, 2018), human health risk assessment (HHRA) (EnRiskS, 2019) and ecological risk assessment (ERA) (EnRiskS, 2020) documents.
- Bremer River – this area comprises the Bremer River riparian zone adjacent to the northern and eastern boundaries of the Base and extends as far downstream as Woodend Road Reserve. Private properties within this area are used for agriculture and rural residential purposes.

The Management Area does not include the Bremer River and adjacent properties to the north and northwest of the Base (upstream of the section of Bremer River referred to above), or Purga Creek, south of the Base.

2.3 PFAS Source Areas

The DSI (CH2M Hill, 2018) identified 29 CPSAs for PFAS on-Base which are shown in **Figure 2** in **Appendix A** and listed in the table below:

Table 2 Summary of CPSAs

CPSA Type	CPSA	Description
Major	A	Former Topside Aviation Fire Training Area (FTA) and current FTA Pad
	B	Hangar 410 (Building 410) and Former Landfill
	C	Frogs Hollow Former Fire Training School Location
	D	Sewage Treatment Plant (STP)
	G	Former FTA and Operations Testing Area
	J	Former FTA and Operations Testing Area
	M	Former Fuel Farm 1 and Triple Interceptor Pit
	N	Fire Station, FTA training
	U	38 Squadron Hangar

CPSA Type	CPSA	Description
	V	AFFF Wastewater Holding Tank[8]
	W	Fire Fighting Training School
	X	Former Structural and Open Pit FTA
	Y	Former Secondary FTA
	DD	HS748 Former FTA on Disused Runway
Moderate	E	Historic Containment Pond
	CC	Former Landfill
	FF	Buried PFAS impacted stockpile from CPSA A
	S	AFFF Store / Truck Washdown at Fuel Farm 2/2A
Minor	BB	Areas used for irrigation – former grassed runways
	F	Potential former FTA and Landfill
	Q	1 Squadron Hangar and 6 Squadron Hangar
	Z	Fuel UST with AFFF listing
Insignificant	H	Potential Former FTA and Landfill
	I	Potential Former FTA and Landfill
	L	Potential Former Fire Training and Operations Testing Area
	O	Potential location of F1-11 2006 incident
	P	Potential location of 1978 Skyhawk incident
	R	K Store- potential AFFF storage
	T	Potential Location of Aircraft F-4E Incident

The DSI identified two secondary impact areas:

- AA – triple interceptor pits at engine test cell facilities 1 and 2, which receive wastewaters from a variety of on-Base facilities.
- EE – former sports ovals – potentially irrigated with PFAS contaminated wastewater.

Following completion of the HHRA (EnRiskS, 2019), 15 of these source areas were considered relevant from the perspective of contributing materially towards risk, identified below:

Source areas with a high relative contribution toward risk:

- CPSA A – Former Topside Aviation FTA and current FTA Pad
- CPSA D – Sewage Treatment Plant

Source areas with a moderate relative contribution toward risk:

- CPSA N – Former Fire Station
- CPSA V – AFFF Wastewater Holding Tank
- CPSA W – Fire Fighting Training School
- CPSA X – Former Structural and Open Pit FTA

Source areas with a low relative contribution toward risk:

- CPSA B - Hangar 410 (Building 410) and Former Landfill
- CPSA C – Frogs Hollow Former Fire Training School

[8] Revised from Moderate to Major following a recommendation in CH2M Hill (2020a).

- CPSA G – Former FTA and Operations Testing Area
- CPSA J – Former FTA, Operations Testing Area and Bomb Replacement Apron
- CPSA M – Former Fuel Farm 1
- CPSA U – 33 Squadron Hangar
- CPSA Y – Former Secondary FTA
- CPSA CC – Former Landfill
- CPSA DD – HS748 Former FTA on Disused Runway.

3.0 Sampling and Analytical Methodology

3.1 Sampling Methodology

The sampling methodology is presented in the SAQP, presented in **Appendix E**.

The SAQPs (AECOM, 2021a, 2022b, c, 2023b) outline the proposed schedule and rationale for sampling, prescribing six-monthly groundwater, surface water and sediment sampling within the Management Area.

The sampling events conducted between March 2021 and May 2023 included the collection of selected groundwater, surface water and sediment samples from across the Management Area. On-Base and off-Base groundwater sampling locations are shown in **Figure 4** in **Appendix A** and surface water and sediment sampling locations are shown in **Figure 5**, **Appendix A**.

Table 3 provides a summary of the groundwater sampling locations including the approximate source areas up-gradient of the well and aquifer monitored to give context to the information presented in **Section 7.0**.

Table 3 Groundwater sampling locations

Monitoring Well	Approximate source area up-gradient of monitoring well	Aquifer Monitored
MW002	Major CPSA A Former Topside Aviation FTA and current FTA Fire Pad	Walloon Coal Measures
MW033		Walloon Coal Measures
MW047	Major CPSA B Hangar 410 and Former Landfill	Tertiary Formation
MW037	Major CPSA C Frogs Hollow Former Fire Training School Location	Alluvium
MW021	Major CPSA D Sewage Treatment Plant	Alluvium
MW032		Alluvium
MW048	Moderate CPSA E Historical Containment Pond	Alluvium
MW050	Major CPSA G Former FTA and Operational Testing Area	Alluvium
MW005	Major CPSA J Former FTA and Operational Testing Area	Alluvium
MW006	Major CPSA M Former Fuel Farm 1 and Triple Interceptor Pit and Major CPSA N Fire Station	Alluvium
MW023		Alluvium
MW028		Alluvium
MW029		Alluvium
MW036		Alluvium
MW309		Tertiary Formation
MW046	Minor CPSA V AFFF Wastewater Holding Tank	Tertiary Formation
MW026	Major CPSA W Fire Fighting Training School	Tertiary Formation
MW030		Walloon Coal Measures
MW031		Tertiary Formation
MW042		Walloon Coal Measures
MW043		Walloon Coal Measures
MW041	Major CPSA X Former Structural and Open Pit FTA	Walloon Coal Measures

Monitoring Well	Approximate source area up-gradient of monitoring well	Aquifer Monitored
MW020	Minor CPSA Z Fuel underground storage tank (UST) with AFFF listing	Tertiary Formation
MW007	Moderate CPSA AA Triple Interceptor Pits at Engine Test Cell Facilities 1 and 2	Alluvium
MW012	Minor CPSA BB Areas used for irrigation- former grassed runways	Tertiary Formation
MW022	Moderate CPSA CC Former Landfill	Alluvium
MW049	Major CPSA DD HS748 Former FTA on Disused Runway	Alluvium
MW054S	Wells are adjacent to off-Base Warrill Creek. These locations are down-gradient of multiple source areas.	Alluvium
MW054D		Walloon Coal Measures
MW057S		Alluvium
MW057I		Tertiary Formation
MW024	Wells are adjacent to on-Base Bremer River. These locations are down-gradient of multiple source areas.	Alluvium
MW025		Alluvium
MW034		Alluvium
MW035		Alluvium
MW044		Alluvium
MW055S		Alluvium
MW055D		Walloon Coal Measures
MW056S	Wells are adjacent to off-Base Bremer River. These locations are down-gradient of multiple source areas.	Alluvium
MW056I		Tertiary Formation

Table 4 presents the surface water and sediment sampling locations and surface water feature sampled, with the locations presented in **Figure 5**, **Appendix A**.

Table 4 Surface water and sediment sampling locations

Area	Sampling Locations	Number of Locations
On-Base Drains	SD/SW002, SD/SW003, SD/SW008, SD/SW011, SD/SW021, SD/SW027, SD/SW028, SD/SW030, SD/SW033, SD/SW037, SD/SW038, SD/SW041, SD/SW048, SD/SW049, SD/SW053, SD/SW056, SD/SW059, SD/SW064, SD/SW067, SD/SW076, SD/SW079, SD/SW080	22
Warrill Creek	SD/SW004, SD/SW005, SD/SW009, SD/SW015, SD/SW016, SD/SW018, SD/SW020, SD/SW026, SD/SW034, SD/SW043, SD/SW099, SD/SW100	12
Bremer River	SD/SW025, SD/SW036, SD/SW039, SD/SW040, SD/SW045, SD/SW047, SD/SW050, SD/SW051, SD/SW052, SD/SW088, SD/SW089, SD/SW090, SD/SW091, SD/SW094, SD/SW098	15

A summary of the OMP monitoring events completed in accordance with the SAQPs between March 2021 and May 2023 is provided in **Table 5**.

Table 5 Summary of monitoring events

Monitoring Event (Sampling dates)	Scope as per SAQP	Samples Collected	Analysis
Biannual Sampling – March/April 2021 Groundwater, Surface Water and Sediment Sampling Event (AECOM, 2021c) (30 March – 21 April 2021)	46 GW samples	38 GW samples	PFAS suite
	49 SW samples	48 SW samples	
	49 SD samples	49 SD samples	
	Download 7 data loggers	Download 7 data loggers	None
Biannual Sampling – October 2021 Groundwater, Surface Water and Sediment Sampling Event (AECOM, 2022a) (18 – 28 October 2021)	46 GW samples	40 GW samples	PFAS suite
	49 SW samples	48 SW samples	
	49 SD samples	49 SD samples	
	Download 7 data loggers	Download 6 data loggers	None
Biannual Sampling – March/April 2022 Groundwater, Surface Water and Sediment Sampling Event (AECOM, 2022d) (28 March – 6 April 2022)	40 GW samples	40 GW samples	PFAS suite
	49 SW samples	48 SW samples	
	49 SD samples	49 SD samples	
	Download 7 data loggers	Download 6 data loggers	None
Biannual Sampling – October/November 2022 Groundwater, Surface Water and Sediment Sampling Event (AECOM, 2023a) (18– 28 October and 9 November 2022)	40 GW samples	38 GW samples	PFAS suite
	49 SW samples	45 SW samples	
	49 SD samples	45 SD samples	
	Download 7 data loggers	Download 5 data loggers	None
Biannual Sampling – April/May 2023 Groundwater, Surface Water and Sediment Sampling Event (AECOM, 2023c) (17 April – 23 May 2023)	40 GW samples	38 GW samples	PFAS suite
	49 SW samples	47 SW samples	
	49 SD samples	49 SD samples	
	Download 7 data loggers	Download 6 data loggers	None

3.2 Deviations from SAQP requirements

The work undertaken during the monitoring period complied with the most recent version of the SAQPs (AECOM, 2021a, 2022b, c, 2023b) except for the deviations summarised in **Table 6** below. In addition, a discrepancy has been identified on the SAQPs for the upstream monitoring location along Warrill Creek. Figure 3 in the SAQPs shows the sampling location to be SD/SW043, however, Section 4.3 identifies the location as SD/SW070. SD/SW043 is the correct sampling location and was monitored in all five sampling events during the monitoring period.

Table 6 Deviation from SAQP during biannual sampling events – March 2021 to May 2023

SAQP Requirement	Sampling Event Description	Impact of Deviation on Data Set
March/April 2021 Sampling Event		
Collection of groundwater samples from 46 locations	Eight monitoring wells identified in the SAQP were not sampled as discussed below: • MW015, MW039, MW040 and MW056, were destroyed during construction of new infrastructure. • MW008 and MW009 were damaged and could not be sampled. • MW041 and MW049 could not be located due to the presence of long grass (at MW041) and a fallen tree (MW049).	The 2020 annual IR (AECOM, 2021b) identified that the loss of the six wells impacts the ongoing monitoring program by reducing the availability of groundwater monitoring data down-gradient of one of the main potential source areas, the former topside aviation FTA and current FTA pad (CPSA A). There are limited data available for assessment of the extent of PFAS in groundwater. The non-sampling of two wells (MW041 and MW049) is considered of low significance as down-gradient wells were monitored during the sampling event.
Collection of surface water samples from 49 locations	One on-Base drain location was dry (SW048).	As the location was dry, there were no PFAS migrating in surface water at the time of the visit.
Collection of groundwater samples by Hydrasleeve™	The groundwater sample from monitoring well MW054S was collected by bailer as there was insufficient water for Hydrasleeve™ sampling.	There is not expected to be an impact by using the bailer to collect the groundwater sample as this is an accepted method for groundwater sample collection in instances where low well volumes are present.
October 2021 Sampling Event		
Collection of groundwater samples	Six wells identified in the SAQP were not sampled: • MW015, MW039, MW040 and MW056, were destroyed during construction of new infrastructure. • MW008 and MW009 were damaged and could not be sampled.	The 2020 AIR (AECOM, 2021b) identified that the loss of the six wells impacts the program by reducing the availability of groundwater monitoring data down-gradient of one of the main potential source areas, the former topside aviation FTA and current FTA pad (CPSA A). There are limited data available for assessment of the extent of PFAS in groundwater.
Collection of 49 surface water samples	One on-Base drain location was dry (SW048).	As the location was dry, there were no PFAS migrating in surface water at the time of the visit.
Collection of groundwater samples by Hydrasleeve™	The groundwater samples collected from monitoring wells MW048 and MW049 were collected by bailer as there was insufficient water for Hydrasleeve™ sampling.	There is not expected to be an impact by using bailing.

SAQP Requirement	Sampling Event Description	Impact of Deviation on Data Set
Collection of water quality parameters at all groundwater sampling locations	Quality parameters for groundwater at MW031 were inadvertently not collected prior to the sampling of the well.	The non-collection of these data has minimal impact on the sampling program as a large dataset has been collected to date.
Collection of field blank for each day fieldwork is complete.	A field blank was inadvertently not collected during a resampling visit conducted on 26 November 2021 to verify groundwater analytical results in two of the monitoring wells.	No impact to the program. PFAS are not volatile so are unlikely to be detected in field blanks.
March/April 2022 Sampling Event		
Collection of 49 surface water samples	One on-Base drain location was dry (SW067).	As the location was dry, there were no PFAS migrating in surface water at the time of the visit.
Download of seven dataloggers	The datalogger in MW032 was found to be not functioning. This was replaced in June 2022.	No groundwater level data were collected for MW032 between the previous sampling event in October 2021 and June 2022 and fluctuations in groundwater level during this period are not known. This reduces understanding of the groundwater elevations in this portion of the Management Area.
Collection of sediment samples from 49 locations	Sediment samples were collected by grab sample using a clean pair of nitrile gloves rather than being collected using a trenching shovel or piston sampler, as specified in the SAQP.	There is not expected to be an impact due to the use of a different sampling technique.
Collection of field parameter data	The SAQP did not specify whether field parameters should be collected before or after collection of the water sample. During the sampling event, all field measurements were collected before sampling. The probe on the water quality meter was decontaminated prior to measurements being collected from each water sample.	There is not expected to be an impact on the program as field measurements can be collected before or after sampling.
October / November 2022 Sampling Event		
Collection of 40 groundwater samples and download of seven dataloggers	Due to the presence of dense vegetation, off-Base monitoring wells MW056S and MW056I were unable to be sampled and the dataloggers within these wells could not be retrieved and downloaded.	The non-sampling of these locations reduces the spatial coverage of the groundwater monitoring network to the east of the Base. The non-retrieval of the data during this event delays the evaluation of groundwater elevations.

SAQP Requirement	Sampling Event Description	Impact of Deviation on Data Set
Collection of 49 surface water samples and 49 sediment samples	Two surface water / sediment locations were not accessible as they were in construction zones (SW/SD011, and SW/SD076) and one location (SW/SD050) was not accessible due to Base conditions.	The non-sampling of SW/SD011 and SW/SD076 means there are no data available to evaluate PFAS concentrations at these drain locations. The non-sampling of SW/SD050, which is located along the Bremer River, is of lower significance as there are data available from sampling locations further downstream.
Analysis of all surface water and sediment samples for PFAS	The sample bottles for samples SW028 and SD009 were transferred to the laboratory but could not be found for analysis.	The non-analysis of these samples, which are located along Warrill Creek is of low significance as there are data available from sampling locations further downstream.
Installation of Hydrasleeves™ to the target depth in the SAQP	The Hydrasleeve™ installed in monitoring well MW023 was installed at 8.7 metres below top of casing (m bTOC) compared to the target depth of 11 m bTOC.	The Hydrasleeve™ was still within the screened interval so there was no impact on the quality of the data.
Collection of samples in October 2022	Due to the wet conditions during October 2022, five groundwater monitoring wells could not be safely accessed and were sampled approximately two weeks later in November 2022.	The delay of two weeks in sampling five of the wells is considered to be a relatively short period and is unlikely to impact the ongoing monitoring program.
Download of seven dataloggers	Dataloggers from MW056S and MW056I could not be retrieved as the wells could not be found due to the presence of heavy vegetation. Data from all other locations were downloaded. During the sampling event in April 2022, the datalogger in MW032 was found to be not functioning. The datalogger was replaced in June 2022.	Dataloggers download at MW056S and MW056I will be attempted during the next sampling event. The non-retrieval of the data during this event delays the evaluation of groundwater elevations. Groundwater level data in MW032 were not available for the period April to June 2022. As groundwater level data were not available, this reduces the understanding of groundwater level changes in 2022 at this portion of the Base near the Warrill Creek.
LOR for water samples	Due to matrix interference during the analysis of the groundwater sample from MW044, the LOR were raised for sum of PFHxS and PFOS above the drinking water guideline value and PFOS above the ecological 95% freshwater species protection guideline value.	No impact to OMP program. Duplicate and triplicate samples were also collected from MW044. The triplicate sample, analysed at NMI was not affected by matrix interference and consequently the triplicate results were used for assessment purposes in this report.
April / May 2023 Sampling Event		
Collection of 40 groundwater samples	Due to the presence of dense vegetation, off-Base monitoring wells MW056S and MW049 were unable to be sampled.	The non-sampling of these locations reduces the spatial coverage of the groundwater monitoring network to the south and east of the Base.

SAQP Requirement	Sampling Event Description	Impact of Deviation on Data Set
Collection of 49 surface water samples	Surface water samples SW033 and SW038 were not collected as these locations as they were dry at the time of sampling.	The non-sampling of these wells means no data were available to evaluate PFAS concentrations at these locations. The absence of water means there was no PFAS migrating at the time of the visit.
Download of seven dataloggers	The datalogger in MW055S was found to be not functioning. Groundwater level data in MW028 and MW056I between February and April 2023 were not available. The datalogger within MW056S could not be retrieved and downloaded as the well could not be found.	The datalogger in MW055S was replaced in May 2023. The dataloggers in MW028 and MW056I were retrieved and reinstalled. The non-collection of groundwater level at MW055S, MW056S, MW028 and MW056I reduces the understanding of groundwater level changes in 2023 at the eastern portion of the Base near Bremer River.
Collection of groundwater samples by Hydrasleeve™	Two monitoring wells, MW024 and MW031, were sampled by bailing.	Overall, there is not expected to be an impact by using bailing. However, the groundwater sample from MW024 reported a new maximum sum of PFAS and PFHxS concentration. As the laboratory reported the limits of reporting (LOR) for PFAS were raised due to matrix interference, the elevated concentrations may be due to the presence of sediment in the bailed sample. Whilst bailing is an acceptable sample collection method, the reliability of the data may be affected.
Collection of samples in April 2023	Due to military exercises during the sampling event, access to one portion of the Base (Hansens Farm Conservation Area) was restricted until 23 May, delaying the collection of ten samples by three weeks.	The relatively short delay is unlikely to impact the ongoing monitoring program.
Collection of dissolved oxygen measurements	Due to a fault with the dissolved oxygen sensor on the water quality meter, dissolved oxygen measurements could not be collected for 12 water samples.	The non-collection of these data has minimal impact on the sampling program as a large dataset has been collected to date.
Collection of 49 surface water samples	Sample SW018 was collected from the drainage channel entering Warrill Creek instead of from Warrill Creek.	An elevated PFAS concentration was detected in the sample. The sample results from this location have been disregarded as the sample is not considered representative of sample location SW018. The result has been removed from the dataset.

4.0 Quality Assurance and Quality Control

Data validation pertaining to the data in this report has been previously completed and discussed within the individual factual reports presented in **Appendix F** and listed below:

- Sampling Event Factual Report, March/April 2021 – PFAS OMP – RAAF Base Amberley, February 2022 (AECOM, 2021c).
- Sampling Event Factual Report, October 2021 – PFAS OMP – RAAF Base Amberley, February 2022 (AECOM, 2022a).
- Sampling Event Factual Report, March/April 2022 – PFAS OMP – RAAF Base Amberley, September 2022 (AECOM, 2022d).
- Sampling Event Factual Report, October/November 2022 – PFAS OMP – RAAF Base Amberley, January 2023 (AECOM, 2023a).
- Sampling Event Factual Report, April/May 2023 PFAS OMP – RAAF Base Amberley, September 2023 (AECOM, 2023c).

Data validation procedures employed in the assessment of the field and laboratory quality assurance/quality control (QA/QC) data indicated that the reported analytical results are representative of the sample locations and that the overall quality of the analytical data produced is acceptably reliable for the purpose of the factual and interpretive reports.

5.0 Assessment Criteria

Adopted assessment criteria references national guidance in the form of the PFAS National Environmental Management Plan (NEMP), Heads of Environmental Protection Agencies (HEPA) (2020), Defence estate and environmental strategies, and Defence PFAS-specific strategies and guidance. At the time of preparing this report, a number of guidance documents were available in Australia including:

- PFAS NEMP, version 2.0, January 2020 (HEPA, 2020).
- National Environment Protection (Assessment of Site Contamination) Measure (ASC NEPM) 1999, Schedule B1, as amended in 2013 (NEPC, 2013).

The adopted PFAS assessment criteria to assess the data generated as part of the monitoring are presented in **Table 7** below. The adopted assessment criteria are in accordance with the PFAS screening criteria nominated in the PMAP (Defence, 2020).

Table 7 Summary of adopted assessment criteria

Pathway	Compound	Criteria	Comment / reference
Human Health Receptors			
Drinking water - groundwater	PFOS + PFHxS	0.07 µg/L	The values are from the PFAS NEMP (HEPA, 2020) and adopted PFAS Screening Criteria in the OMP. *All groundwater results were compared to these criteria.*
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	The values presented are from PFAS NEMP (HEPA, 2020), which are sourced from National Health and Medical Research Council (NHMRC) (2019) and adopted PFAS Screening Criteria in the OMP. *All surface water results were compared to these criteria.*
	PFOA	10 µg/L	
Ecological Receptors			
Freshwater (95% species protection values)	PFOS	0.13 µg/L	The values are from the PFAS NEMP (HEPA, 2020) and adopted PFAS Screening Criteria in the OMP. *All surface water and groundwater results were compared to these criteria.*
	PFOA	220 µg/L	
Freshwater (99% species protection values)	PFOS	0.00023 µg/L	
	PFOA	19 µg/L	

At the time this report was prepared no HEPA (2020) endorsed criteria were available in Australia for PFAS in sediment.

It is noted that for the purpose of presenting data within this report, AECOM has focussed on PFOA, PFOS and sum of PFOS and PFHxS, i.e., those PFAS for which there is either human health and/or ecological assessment criteria available in Australia.

6.0 Contextual and Ancillary Information

6.1 Remediation Projects

No remediation projects in response to PMAP actions (Defence, 2020) were completed during the monitoring period.

During 2022, soil investigation activities were completed at CPSA A (former topside aviation fire training area) and CPSA D (sewage treatment plant) to close out data gaps and support the development of a remediation action plan (RAP) for these CPSAs in 2023. Over the next year, Defence will develop RAPs for soil and groundwater for the main source areas at the Base as part of the PMAP delivery project. Remediation activities are estimated to commence within the next two years, following the finalisation of the RAPs. A mass flux study to understand transport pathways is being conducted by Defence and is in preparation at the time of preparing this report.

A small amount of data were available in the Defence database for sediment samples collected in August 2021 as part of the PMAP delivery project from on-Base drainage feature discharge points. These data have been considered in this report. **Table 8** below summarises the location of the samples and discharge points and sum of PFHxS and PFOS concentrations. Full results are presented in **Table T5**, **Appendix B**. The locations of the discharge points are shown on **Figure 5**, **Appendix A**.

Table 8 Sediment samples collected as part of the PFAS Delivery Project in August 2021

Sediment Sample	Discharge Point	Discharge Location	Sum of PFHxS and PFOS (mg/kg)
SD518	DP1	Bremer River	<0.0002
SD520	DP8	Bremer River	0.0191 - 0.024
SD521	DP14	Warrill Creek	0.258
SD522	DP15	Warrill Creek	0.0212
SD523	DP16	Warrill Creek	0.0907
SD524	DP17	Warrill Creek	0.0838
SD525	DP18	Warrill Creek	3.15
SD526	DP19	Warrill Creek	0.012
SD527	DP20	Warrill Creek	0.0089
SD528	DP21	Warrill Creek	0.0353
SD529	DP23	Warrill Creek	0.0648
SD530	DP24	Warrill Creek	0.0232

6.2 Infrastructure Projects

A summary of recent and planned infrastructure projects on Base is provided in **Appendix C**. The details were originally provided by the Environment and Sustainability Manager South Queensland – RAAF Base Amberley in February 2021 with updates provided by the RAAF Base Amberley Environment and Sustainability Manager in February 2022 and April 2023.

During the monitoring period, none of the infrastructure projects identified in **Appendix C** involved excavation or remediation of PFAS impacted soils from the key CPSA, in particular CPSA A, D, N and V. Therefore, these infrastructure projects are unlikely to have affected the PFAS OMP data.

A project to design and construct a STP reached the 100% final design in 2023. The existing STP (CPSA D) was identified as having a high relative contribution to risk, refer to **Section 2.3**. Construction of the new STP commenced in April 2023 and is expected to be completed by the end of 2024. The old STP will be decommissioned (but not remediated) following commissioning of the new plant.

Any infrastructure works involving soil disturbance and reuse, movement and stockpiling of soil on-Base are managed as per Defence environmental guidelines including the Defence PFAS Construction and Maintenance Framework (Defence, 2021), the Defence Contamination Management Manual (Defence, 2018 amended 2021) (in particular Annex K which details the management, reuse and stockpiling of PFAS impacted soil) and the Pollution Prevention Management Manual (Defence, 2017).

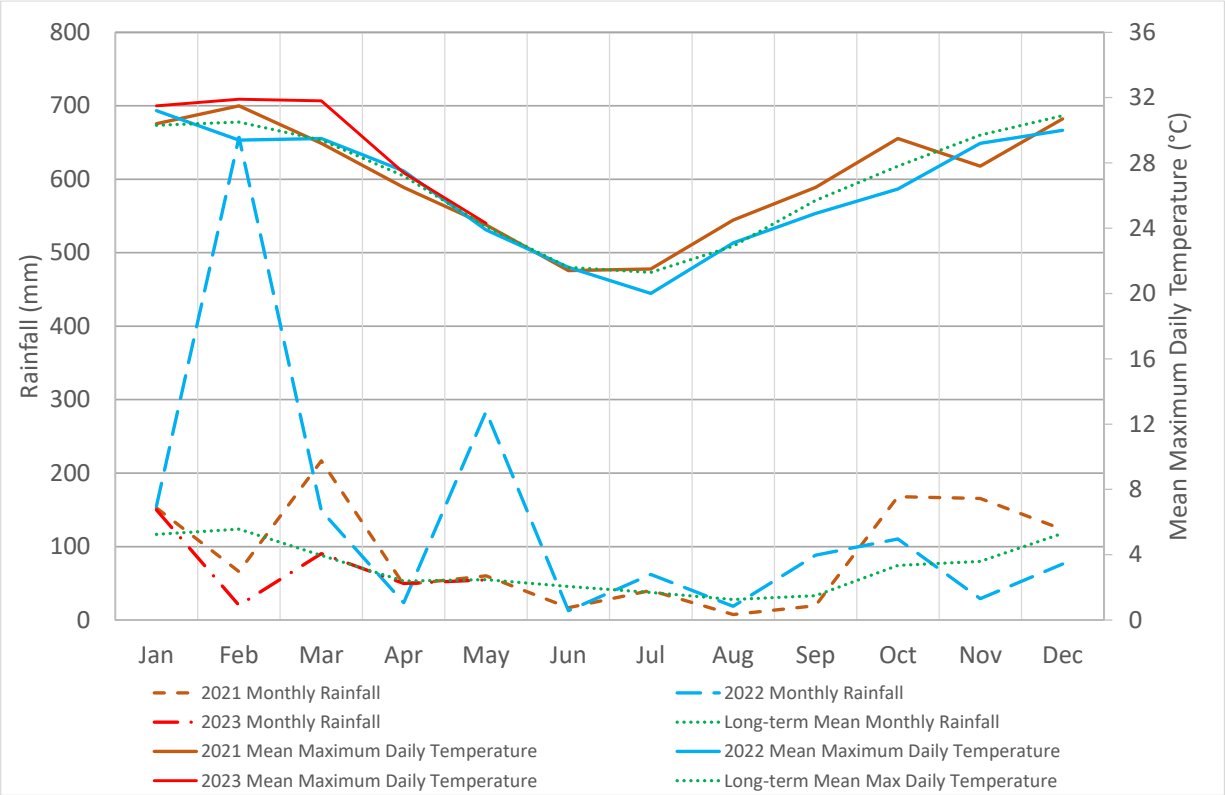
6.3 Significant Weather Events

Rainfall and temperature measurements in the period March 2021 to May 2023 from the Bureau of Meteorology (BoM) monitoring station at Amberley (Station Number 04004) are shown in **Chart 1** together with long term (1941 to 2023) mean monthly total rainfall and long term mean maximum daily temperatures. The mean annual rainfall at Amberley is 867.7 millimetres (mm) per year.

The BoM monitoring station (040004) reported higher than average rainfall for 2021 with 1083.9 mm recorded during the year. The recorded rainfall in March and April 2021, during the post-wet season sampling event was 265 mm which was 1.9 times higher than the mean rainfall for this period of 140.8 mm. The reported rainfall during October 2021 was 167.8 mm which was 2.2 times higher than the mean rainfall of 73.8 mm.

The BoM monitoring station (040004) reported approximately double the annual average rainfall for 2022 with 1,666.0 mm recorded. The higher rainfall totals are due to the occurrence of a La Niña event between 2021 and 2022. La Niña is a phase of the natural climate cycle (El Nino-Southern Oscillation) and results in increased rainfall in Australia.

Chart 1 Monthly rainfall and mean maximum temperatures at Amberley monitoring Station (04004) from April 2021 to May 2023



The recorded rainfall in March and April 2022 was 172.4 mm which was slightly higher than the mean rainfall for this period of 141.8 mm. The reported rainfall during October 2022 was 110.4 mm which was higher than the mean rainfall of 74.3 mm.

An intense rainfall event (574 mm) occurred between 25 and 28 February 2022 which caused localised flooding along Frog's Hollow Gully, Bremer River and Warrill Creek. The extent of the flooding is uncertain. Another large rainfall event occurred between 12 and 15 May 2022 with 178.8 mm recorded.

The 2023 data indicate lower than average rainfall during the first five months of the year compared to the long-term mean rainfall, indicating a change to El Niño (drier) conditions.

The higher-than-average rainfall conditions recorded during most of the monitoring period has the potential to impact on the interpretation of the data in the following ways:

- In rainfall dependent aquifers, such as the regional setting of the Base, higher than average rainfall can result in higher water tables causing dilution of the aquifer, and potentially affecting the distribution of PFAS compounds within the water column. This may result in lower than previously reported concentrations of PFAS in affected monitoring well locations (see **Section 8.3**).
- Higher than average rainfall can result in higher flow rates in surface water bodies resulting in an increased mass flux of PFAS migration from the Base via surface water, resulting in lower reported concentrations in these water bodies due to dilution with rainwater (see **Section 8.3**).

7.0 Monitoring Data Summary

The following five scheduled biannual monitoring events were completed by AECOM over the monitoring period (26 months):

- March/April 2021 Sampling Event, February 2022 (AECOM, 2021c).
- October 2021 Sampling Event, February 2022 (AECOM, 2022a).
- March/April 2022 Sampling Event, September 2022 (AECOM, 2022d).
- October/November 2022 Sampling Event, January 2023 (AECOM, 2023a).
- April/May 2023 Sampling Event, June 2023 (AECOM, 2023c in draft).

The sample locations are shown on **Figure 4** and **Figure 5** (**Appendix A**). Groundwater elevations for the monitoring period are shown on **Figure 6** to **Figure 15** (**Appendix A**). Results are summarised in following sections and on **Figures 16** to **55** (**Appendix A**).

The monitoring and analytical results are provided in **Tables T1** to **T5** in **Appendix B**.

In addition to the OMP data, AECOM also considered a small amount of sediment data for the Base that were available in the Defence database during the monitoring period, refer to **Section 6.1**.

7.1 Groundwater Results

7.1.1 Groundwater field observations

The groundwater field observations recorded in the sampling events between March 2021 and May 2023 are presented in **Table T1** in **Appendix B**. In summary:

- Oil sheens were not observed in any of the samples.
- In 2021, organic odours were recorded in six wells (MW022, MW033, MW047, MW55S, MW056I, MW057I) with sulfuric odours recorded in five wells (MW042, MW043, MW046, MW047, MW055D).
- In 2022, a hydrocarbon odour was recorded in two wells (MW041 and MW042), sulfuric odours were recorded in four wells (MW002, MW034, MW044, MW057I) and weak septic odours in two wells (MW056S and MW056I).
- In April/May 2023, groundwater in one well (MW033) recorded a sulfuric odour and groundwater from five wells recorded an organic odour (MW041, MW043, MW044, MW046 and MW56I).

7.1.2 Groundwater elevations

Groundwater elevations calculated from the gauging data collected during the sampling events are summarised in **Table 9**, and presented in **Table T1** in **Appendix B** and on **Figures 6 to 15 in Appendix A**. The groundwater elevations in the Alluvium – Tertiary Formation and Walloon Coal Measures aquifers during the sampling events are similar, indicating that there are no large differences in groundwater level between wet and dry season conditions. Note that groundwater in the Alluvium and Tertiary Formation aquifers are in hydraulic continuity. Groundwater in the Walloon Coal Measures is considered to represent a separate aquifer.

The groundwater elevations are generally consistent with previous sampling events DSI (CH2M Hill, 2018), 2019 monitoring reports (CH2M Hill, 2020a, b) and 2020 AIR (AECOM, 2021b).

Table 9 Summary of groundwater elevations during the sampling events between March 2021 and May 2023

Sampling Event	Range in groundwater elevation (mAHD) (No. of wells)	
	Quaternary Alluvium - Tertiary Formation	Walloon Coal Measures
March/April 2021	5.164 to 28.726 (31)	15.481 to 34.562 (6)
October 2021	5.322 to 28.805 (30)	15.566 to 36.362 (7)
March/April 2022	9.783 to 28.795 (32)	14.056 to 36.638 (7)
October / November 2022	9.767 to 28.976 (30)	14.311 to 39.619 (7)
April/May 2023	8.730 to 28.997 (30)	14.040 to 38.093 (7)

Note: **Section 3.1** outlines the groundwater wells within each aquifer.

7.1.3 Data loggers

Continuous level logging was recorded at targeted groundwater monitoring wells as outlined in the SAQPs. Hydrographs are presented in **Appendix D** (**Chart D1** to **D4**) to assist in evaluating and interpreting hydrogeological conditions at the time of monitoring. Rainfall data from Amberley (BoM station 040004) are also presented. Observations are summarised in **Table 10**.

Table 10 Continuous level logging location observations

Type	Well	Aquifer unit	Hydrograph observations
Ground-water hydraulic gradients	MW025	Alluvium	This well showed a response in groundwater elevation of 2.45 m following an intense rainfall event in February 2022. A smaller response in groundwater elevation of 1.23 m occurred between 12 and 15 May 2022 in response to a rain event in May 2022. Refer to **Chart D2**.
	MW028	Alluvium	A large increase in groundwater elevation (6.5 m) was observed during the intense rainfall event in February 2022. A smaller response (increase of 1.44 m) occurred on 26 June 2022. Other months during the monitoring period were stable, neither increasing nor decreasing. Refer to **Chart D2**. The change in groundwater elevation is likely to be associated with surface water effects and connectivity of the aquifer with the nearby Bremer River.
	MW032	Alluvium	There was a large response following wet season rain events in March 2021. Refer to **Chart D2**. Data were not collected during the first part of 2022 as the logger malfunctioned. The logger was replaced in June 2022; however, data were not recorded until September 2022. The reason for this is unknown.
Receiving environment (groundwater paired locations)	MW055S	Alluvium	Showed a response in groundwater elevation of 4.78 m following an intense rainfall event in February 2022. Refer to **Chart D3**. A smaller response in groundwater elevation of 2.78 m occurred between 11 and 15 May 2022. in response to a large rainfall event at this time.
	MW055D	Walloon Coal Measures	The logger in this well was found to have failed and stopped recording data at the beginning of March 2021. The logger was replaced in January 2022. No response to rainfall was recorded during the intense rainfall event in February 2022, however, a change in groundwater elevation of 1.7 m occurred

Type	Well	Aquifer unit	Hydrograph observations
			in May 2022 (at the same time as the increase in MW055S and MW025), in response to a large rainfall event. See **Chart D3**.
	MW056S	Alluvium	Both MW056S and MW056I show similar hydrograph profiles with large changes in groundwater level following the rainfall event in February 2022. MW056I, screened in the Tertiary Formation, showed larger changes in groundwater elevation (13.2 m in February 2022) compared to the groundwater level in MW056S, up to March 2022, refer to **Chart D4**. The change in groundwater elevation is likely to be associated with surface water effects and connectivity of the aquifer with the nearby Bremer River. The change in elevation has the potential to affect contaminant migration. This is discussed in **Section 8.1**.
	MW056I	Tertiary Formation	

7.1.4 Groundwater flow directions

Inferred groundwater contour maps for the Alluvium – Tertiary Formation aquifer for the five sampling events are presented in **Appendix A** in **Figure 6** (April 2021), **Figure 8** (October 2021), **Figure 10** (March/April 2022), **Figure 12** (October 2022), **Figure 14** (April/May 2023).

The inferred groundwater contours for all five sampling events were similar with the contours indicating radial flow in the central western portion of the Base with flow towards the northeast, east and southeast in the directions of Bremer River and Warrill Creek.

Inferred groundwater contours maps for the Walloon Coal Measures aquifer for the five sampling events are presented in **Appendix A** in **Figure 7** (April 2021), **Figure 9** (October 2021, **Figure 11** (March/April 2022), **Figure 13** (October/November 2022), **Figure 15** (April/May 2023). The inferred groundwater contours for both monitoring periods were similar with the contours indicating flow is generally from west to east.

The inferred flow directions are consistent with previous sampling events reported in the DSI (CH2M Hill, 2018), 2019 monitoring reports (CH2M Hill, 2020a, b) and 2020 AIR (AECOM, 2021b). This is further discussed in **Section 8.1.1**.

7.1.5 Groundwater Quality Parameters

The water quality parameters measured during sample collection at RAAF Base Amberley during the monitoring period are presented in **Table 11** and **Table 12**, respectively, and in **Table T1** in **Appendix B**.

Table 11 Summary of quality parameters in groundwater from monitoring wells screened in the Alluvium – Tertiary Formation

	DO (mg/L)					EC (µS/cm)				
	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23
No. of wells	32	32	32	30	30	32	32	32	30	30
Min.	0.18	0.43	0.27	0.01	0.35	352	263	314	317	332
Max.	2.43	2.40	2.8	5.37	3.8	26,338	26,620	23,494	27,834	4,707
Mean	0.81	1.04	0.80	2.12	1.19	5,483	4,725	3,586	4,771	1,435
	pH					Eh (mV)				
	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23
No. of wells	32	32	32	30	30	32	32	32	30	30
Min.	6.39	6.61	6.41	6.01	5.32	122	131	58	111	114
Max.	7.98	7.71	7.80	7.55	7.38	421	376	321	381	380
Mean	7.09	7.03	6.98	6.70	6.71	259	280	164	180	270
	Temp (°C)									
	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23					
No. of wells	32	32	32	30	30					
Min.	19.9	21.0	21.0	21.4	18.3					
Max.	26.4	29.3	25.6	28.8	25.1					
Mean	23.6	24.1	23.2	23.5	22.7					

Notes: DO = dissolved oxygen, EC = electrical conductivity, Eh = corrected oxidation reduction potential, Temp = temperature.

Table 12 Summary of quality parameters in groundwater from monitoring wells screened in the Walloon Coal Measures

	DO (mg/L)					EC (µS/cm)				
	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23
No. of wells	6	7	7	6	8	6	7	7	6	8
Min.	0.08	0.35	0.23	1.21	0.13	318	279	321	561	362
Max.	1.45	0.91	0.85	2.97	3.60	22,840	22,594	55,033	24,823	15,277
Mean	0.63	0.56	0.59	1.66	1.46	14,442	12,619	17,849	14,537	4,180
	pH					Eh (mV)				
	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23
No. of wells	6	7	7	6	8	6	7	7	6	8
Min.	6.47	6.55	6.43	5.8	6.30	121	158	96.7	-44.9	107
Max.	7.41	7.60	7.35	7.0	7.42	266	329	206	218	367
Mean	6.82	6.96	6.73	6.33	6.82	180	248	140	143	211
	Temp (°C)									
	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23					
No. of wells	6	7	7	6	8					
Min.	22.0	22.4	21.4	22.1	19.6					
Max.	25.2	27.0	25.6	25.4	28.5					
Mean	23.5	25.2	24.8	23.9	23.4					

Notes: DO = dissolved oxygen, EC = electrical conductivity, Eh = corrected oxidation reduction potential, Temp = temperature.

Based on the mean groundwater parameter results over the sampling period, the aquifer units at RAAF Base Amberley can be characterised as follows:

- **Alluvium – Tertiary Formation** is near neutral, poorly to mildly oxygenated, mildly reducing and fresh to brackish.
- **Walloon Coal Measures** is near neutral, poorly oxygenated, mildly reducing and brackish to saline.

New minimum electrical conductivity measurements in April/May 2023 were recorded in 19 water samples with eight of the samples recording approximately one order of magnitude decreases, affecting samples from all aquifers. The reason for the decrease is unknown and potentially may indicate a faulty sensor on the water quality meter.

Notwithstanding the issue with electrical conductivity measurements in April/May 2023, the parameter results for the monitoring period are generally consistent with previous findings (CH2M Hill, 2018, CH2M Hill, 2020b, AECOM 2021b) and therefore the higher-than-average rainfall in 2021 and 2022 does not appear to have affected the groundwater quality parameters.

7.1.6 Groundwater Analytical Results

Groundwater analytical results are presented in **Table T2** in **Appendix B** and monitoring activities are summarised in the OMP Sampling Event Factual Reports provided in **Appendix F**.

Groundwater sample results from March/April 2021, October/November 2021, March/April 2022, October/November 2022, and April/May 2023 are presented spatially on **Figures 16** to **Figure 35** in **Appendix A**.

The interpretive assessment of these results is discussed in **Section 8.0**.

A summary of analytical results for PFOA, PFOS and Sum of PFOS and PFHxS concentrations in groundwater collected between March 2021 and May 2023 is provided in **Table 13**.

Deviations from the historical dataset for groundwater are summarised in **Table 14**, below and graphically on the temporal trend graphs for different geographical areas of the Base (**Chart D5** to **D9**) in **Appendix D**.

Table 13 Summary of PFOA, PFOS and Sum of PFOS and PFHxS concentrations in groundwater

Sampling Event	No. of Samples	Compound	Concentration Range (µg/L) in Sampling Event	No. of Samples with Concentration > LOR	No. of Exceedances of Human Health Criteria (Drinking Water)	No. of Exceedances of Ecological Criteria (99% species protection)	No. of Exceedances of Ecological Criteria (95% species protection)
March/April 2021	38	PFOA	<0.01 to 40.3 µg/L	15	7	1	0
		PFOS	<0.01 to 293 µg/L	29	NA	29	16
		PFOS+PFHxS	<0.01 to 420 µg/L	30	20	NA	NA
October 2021	40	PFOA	<0.01 to 21.7 µg/L	18	8	1	0
		PFOS	<0.01 to 194 µg/L	26	NA	26	15
		PFOS+PFHxS	<0.01 to 277 µg/L	27	20	NA	NA
March/April 2022	40	PFOA	<0.01 to 22.1 µg/L	18	6	1	0
		PFOS	<0.01 to 179 µg/L	27	NA	27	21
		PFOS+PFHxS	<0.01 to 264 µg/L	30	23	NA	NA
October/November 2022	38	PFOA	<0.01 to 31.6 µg/L	16	6	1	0
		PFOS	<0.01 to 215 µg/L	25	NA	25	16
		PFOS+PFHxS	<0.01 to 335 µg/L	27	22	NA	NA
April/May 2023	38	PFOA	<0.01 to 7.8 µg/L	18	8	0	0
		PFOS	<0.01 to 92.8 µg/L	28	NA	28	20
		PFOS+PFHxS	<0.01 to 142 µg/L	29	22	NA	NA

Notes:

NA = Not applicable, No. of samples does not include QA samples. Concentration ranges includes QA samples.

Table 14 Deviations from historical groundwater dataset

Sampling Events	Compounds	First-time Detections (µg/L)	First-time exceedances of ecological criteria (µg/L)	First-time exceedances of human health criteria (µg/L)	New historical minimums (µg/L)	New historical maximums (µg/L)
March/April 2021	PFOS	MW024 (0.04)	MW024 (0.04)	None	MW032 (13.0) MW048 (4.77)	MW021 (61.8) MW024 (0.04) MW029 (4.29) MW032 (23.2) MW034 (0.59) MW050 (0.23) MW054S (0.1)
	PFOA	None	None	MW022 (0.56)	MW048 (0.15)	MW020 (2.07) MW021 (2.19) MW022 (0.56) MW046 (40.3)
	PFHxS+PFOS	MW002 (0.02) MW012 (0.01) MW024 (0.04)	None	MW050 (0.30)	MW048 (7.99)	MW002 (0.02) MW012 (0.01) MW020 (40.9) MW021 (81.3) MW024 (0.04) MW030 (2.96) MW032 (31.8) MW034 (0.59) MW036 (0.06) MW050 (0.30)
October 2021	PFOS	None	None	None	MW048 (1.60) MW055S (0.18)	MW021 (71.2) MW029 (4.53) MW032 (24.0) MW043 (0.27) MW048 (1.60)
	PFOA	MW043 (0.02)	None	None	MW046 (21.7) MW048 (0.04)	MW021 (3.10) MW043 (0.02)

Sampling Events	Compounds	First-time Detections (µg/L)	First-time exceedances of ecological criteria (µg/L)	First-time exceedances of human health criteria (µg/L)	New historical minimums (µg/L)	New historical maximums (µg/L)
	PFHxS+PFOS	None	None	None	MW048 (2.34) MW055S (0.48)	MW012 (0.02) MW021 (95.6) MW029 (9.92) MW030 (3.41) MW032 (33.2) MW043 (0.49)
March/April 2022	PFOS	None	None	None	MW007 (4.69) MW022 (0.29) MW049 (3.15)	MW020 (72.1) MW029 (6.04) MW030 (0.12) MW032 (24.6) MW041 (0.30) MW044 (0.02) MW047 (50.2) MW054S (0.16) MW055D (0.02) MW057S (0.28)
	PFOA	MW054S (0.01) MW057S (0.04)	None	MW030 (0.57)	MW007 (0.11) MW022 (0.14) MW049 (0.16)	MW020 (2.60) MW025 (0.12) MW029 (0.32) MW030 (0.57) MW047 (2.37) MW054S (0.01) MW057S (0.05)
	PFHxS+PFOS	None	None	None	MW007 (5.95) MW022 (4.24) MW046 (264) MW049 (4.83)	MW012 (0.17) MW020 (85.9) MW025 (1.63) MW029 (11.2) MW030 (5.43) MW032 (34.8) MW041 (0.44) MW047 (71.1)

Sampling Events	Compounds	First-time Detections (µg/L)	First-time exceedances of ecological criteria (µg/L)	First-time exceedances of human health criteria (µg/L)	New historical minimums (µg/L)	New historical maximums (µg/L)
						MW054S (0.24) MW055D (0.04) MW056I (0.03) MW057S (0.76)
October/November 2022	PFOS	None	None	None	MW022 (0.07) MW055S (0.05)	MW025 (1.06) MW030 (0.16) MW032 (27.9) MW054S (0.18) MW057S (1.03)
	PFOA	None	None	None	MW020 (0.06) MW022 (<0.01)	MW025 (0.17) MW030 (1.19) MW057S (0.11)
	PFHxS+PFOS	None	None	MW057S (2.57) (the concentration exceeded the recreational water guideline value)	MW020 (3.25) MW022 (1.17) MW055S (0.14)	MW025 (2.44) MW029 (11.8) MW030 (11.6) MW032 (37.4) MW041 (0.12) MW054S (0.38) MW057S (2.57)
April/May 2023	PFOS	None	None	None	MW046 (87.1)	MW020 (87.1) MW021 (92.8) MW024 (0.07) MW030 (0.24) MW043 (0.40) MW054S (0.19)
	PFOA	None	None	None	MW046 (7.8)	MW020 (5.59) MW021 (4.45) MW030 (1.37)
	PFHxS+PFOS	None	None	MW024 (0.16)	MW046 (121)	MW020 (134) MW021 (142) MW024 (0.16)

Sampling Events	Compounds	First-time Detections (µg/L)	First-time exceedances of ecological criteria (µg/L)	First-time exceedances of human health criteria (µg/L)	New historical minimums (µg/L)	New historical maximums (µg/L)
						MW030 (12.9) MW043 (0.70) MW044 (0.04) MW050 (0.35)

7.2 Surface Water Results

7.2.1 Surface water field observations

The surface water field observations recorded in the sampling events between March 2021 and May 2023 are presented in **Table T3** in **Appendix B**. In summary:

- In March/April 2021, organic odours were recorded at eight sample locations (SW021, SW037, SW038, SW041, SW045, SW059, SW064, SW079) with biosheens observed in eight sample locations (SW008, SW011, SW025, SW027, SW041, SW059, SW079, SW080).
- In October 2021, organic odours were recorded at eight sample locations (SW008, SW021, SW030, SW033, SW037, SW041, SW056, SW059). Sulfuric odours were observed at two locations (SW076 and SW080). Sheens were observed at seven locations (SW002, SW030, SW037, SW038, SW041, SW067, SW080).
- In 2022 sampling events, no odours or sheens were observed.
- In April/May 2023, organic odours were recorded at SW015, SW025, SW026, SW040, SW043, SW045, SW051, SW053, SW064, SW067, SW079, SW080, SW098, SW099, SW100). A slight biosheen was observed during monitoring of SW041.

Most odours and sheens were observed at drain locations where water was stagnant.

7.2.2 Surface water quality parameters

Surface water quality parameters were measured prior to collecting surface water samples. The stabilised readings for the sampling events during the monitoring period are presented in the sampling event factual reports (**Appendix F**) and in **Table T3**, **Appendix B**. A summary of the water quality parameters in Bremer River, Warrill Creek and on-Base drains for the sampling events are presented in **Table 15**, **Table 16** and **Table 17**.

Table 15 Summary of surface water quality parameter results: Bremer River

	DO (mg/L)					EC (µS/cm)				
	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23
No.	17	16	15	14	12	17	16	15	14	16
Min.	1.6	2.3	4.6	1.4	0.74	175	168	164	94	253
Max.	5.9	4.3	6.7	8.0	8.4	461	804	654	796	1774
Mean	3.7	3.5	5.7	5.2	3.0	266	356	409	511	938
	pH					Eh (mV)				
	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23
No.	17	16	15	14	16	17	16	15	14	16
Min.	6.9	6.6	7.2	6.9	5.2	211	263	131	180	213
Max.	8.3	7.4	7.9	8.0	8.2	340	346	317	232	458
Mean	7.4	7.0	7.5	7.3	6.5	292	319	261	204	281
	Temp (°C)									
	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23					
No.	17	16	15	14	16					
Min.	19.5	19.3	22.3	19.1	13.1					
Max.	25.3	22.7	25.2	20.6	23.5					
Mean	21.4	20.8	23.0	20.2	17.3					

Notes: DO = dissolved oxygen, EC = electrical conductivity, Eh = corrected oxidation reduction potential, Temp = temperature.

Table 16 Summary of surface water quality parameter results: Warrill Creek

	DO (mg/L)					EC (µS/cm)				
	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23
No.	11	11	11	12	8	11	11	10	12	11
Min.	5.0	1.9	4.0	2.9	0.3	301	326	280	110	209
Max.	6.0	6.9	6.6	7.4	1.3	377	869	3126	814	709
Mean	5.4	5.1	5.9	6.3	0.9	331	661	427	541	555
	pH					Eh (mV)				
	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23
No.	11	11	11	12	11	11	11	11	12	11
Min.	7.2	6.8	7.2	6.6	6.8	308	309	223	134	213
Max.	7.6	7.4	7.7	7.4	8.0	379	354	286	227	243
Mean	7.4	7.4	7.6	7.1	7.5	327	333	250	202	230
	Temp (°C)									
	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23					
No.	11	11	11	12	11					
Min.	19.5	19.7	22.5	20.0	19.4					
Max.	21.1	24.5	23.4	26.3	22.1					
Mean	20.7	20.6	22.8	21.2	20.7					

Notes: DO = dissolved oxygen, EC = electrical conductivity, Eh = corrected oxidation reduction potential, Temp = temperature.

Table 17 Summary of surface water quality parameter results: Drains

	DO (mg/L)					EC (µS/cm)				
	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23
No.	20	17	21	19	19	21	17	21	19	20
Min.	0.7	0.01	0.3	0.4	0.4	150	141	20.2	33.6	137
Max.	7.5	8.8	9.8	8.9	3.3	954	728	465	418	1045
Mean	3.6	3.2	5.0	6.2	1.2	487	376	211	249	480
	pH					Eh (mV)				
	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23
No.	21	17	21	19	20	21	17	21	19	20
Min.	6.6	6.3	6.4	6.3	6.6	71	96	126	138	177
Max.	9.9	8.3	8.3	8.2	9.5	320	330	525	320	298
Mean	7.6	7.2	7.3	7.3	7.3	204	257	262	204	253
	Temp (°C)									
	Apr-21	Oct-21	Apr-22	Oct-22	Apr-23					
No.	21	17	21	19	20					
Min.	18.1	19.0	21.1	20.0	17.8					
Max.	29.8	29.7	28.1	32.6	29.2					
Mean	24.6	24.4	23.5	22.2	22.8					

Notes: DO = dissolved oxygen, EC = electrical conductivity, Eh = corrected oxidation reduction potential, Temp = temperature.

Based on the mean results the drainage channel water and creek water are comparable and can be characterised as near neutral, moderately to well oxygenated, mildly reducing and fresh. This is consistent with previous results (CH2M Hill, 2018, CH2M Hill, 2020b, AECOM, 2021b).

7.2.3 Surface water analytical results

Surface water analytical results for the sampling events are presented in **Table T4** in **Appendix B**. Monitoring activities and laboratory analytical reports are presented in the OMP sampling event factual reports in **Appendix F**. A summary of the surface water analytical results during the monitoring period is provided in **Table 18**. Deviations from the historical dataset are provided in **Table 19**.

Surface water sample results for sum of PFOS and PFHxS and PFOA[9] for each of the five sampling events between March 2021 and May 2023 are presented in **Figure 36** to **Figure 45** in **Appendix A**.

Historical surface water concentrations of sum of PFOS and PFHxS have been displayed graphically on temporal trend charts by water body type (**Charts 10** to **12**, **Appendix D**) and are discussed in **Section 8.3**.

[9] Figures showing PFOS have not been included as the data presented would be similar to the sum of PFOS and PFHxS figures.

Table 18 Summary of PFOA, PFOS and PFOS+PFHxS Concentrations in Surface Water

Sampling Event	No. of Samples[1]	Compound	Concentration Range (µg/L) in Sampling Event	No. of Samples with Concentration > LOR	No. of Exceedances of Human Health Criteria	No. of Exceedances of Ecological Criteria (99% species protection)	No. of Exceedances of Ecological Criteria (95% species protection)
March/April 2021	48	PFOA	<0.01 to 7.7 µg/L	20	0	0	0
		PFOS	<0.01 to 63.8 µg/L	38	NA	38	20
		PFOS+PFHxS	<0.01 to 108 µg/L	38	16	NA	NA
October 2021	48	PFOA	<0.01 to 2.7 µg/L	19	0	0	0
		PFOS	<0.01 to 78.6 µg/L	35	NA	35	21
		PFOS+PFHxS	<0.01 to 101 µg/L	35	12	NA	NA
March/April 2022	48	PFOA	<0.01 to 4.5 µg/L	21	0	0	0
		PFOS	<0.01 to 31.4 µg/L	38	NA	38	21
		PFOS+PFHxS	<0.01 to 60 µg/L	38	13	NA	NA
October/November 2022	45	PFOA	<0.01 to 1.9 µg/L	17	0	0	0
		PFOS	<0.01 to 17.5 µg/L	30	NA	30	24
		PFOS+PFHxS	<0.01 to 24.6 µg/L	30	7	NA	NA
April/May 2023	47	PFOA	<0.01 to 1.1 µg/L	20	0	0	0
		PFOS	<0.01 to 23.9 µg/L	38	NA	38	22
		PFOS+PFHxS	<0.01 to 45.9 µg/L	38	15	NA	NA

Notes:

NA = Not applicable, No. of samples does not include QA samples. Concentration ranges includes QA samples.

Table 19 Deviations from historical surface water dataset

Sampling Events	Compounds	First-time Detections (µg/L)	First-time exceedances of ecological criteria (µg/L)	First-time exceedances of human health criteria (µg/L)	New historical minimums (µg/L)	New historical maximums (µg/L)
March/April 2021	PFOS	None	None	None	SW005 (0.05) SW008 (0.37) SW021 (16.4) SW026 (0.03) SW037 (1.30) SW038 (<0.01) SW040 (0.06) SW045 (0.05) SW047 (<0.01) SW050 (0.02) SW051 (0.04) SW064 (0.87) SW076 (1.98) SW079 (6.30)	SW009 (1.05) SW030 (4.46) SW033 (63.8) SW080 (29.9)
	PFOA	None	None	None	SW002 (0.22) SW047 (<0.01) SW064 (0.04)	SW009 (0.08) SW021 (3.25) SW030 (0.36) SW033 (7.70) SW059 (3.62) SW080 (1.50)
	PFHxS+PFOS	None	None	None	SW005 (0.05) SW008 (0.53) SW026 (0.03) SW038 (<0.01) SW040 (0.09) SW045 (0.07) SW047 (<0.01) SW050 (0.02) SW051 (0.04)	SW009 (1.80) SW030 (9.64) SW033 (108) SW059 (30.7) SW080 (55.9)

Sampling Events	Compounds	First-time Detections (µg/L)	First-time exceedances of ecological criteria (µg/L)	First-time exceedances of human health criteria (µg/L)	New historical minimums (µg/L)	New historical maximums (µg/L)
					SW064 (1.71)	
October 2021	PFOS	None	None	None	SW002 (0.66) SW005 (<0.01) SW021 (9.50) SW027 (0.55) SW041 (2.61) SW050 (<0.01) SW064 (0.71) SW079 (0.41) SW080 (3.12)	SW030 (7.68) SW033 (78.6)
	PFOA	None	None	None	SW002 (0.07) SW027 (0.05) SW059 (0.59) SW076 (0.20) SW079 (<0.02) SW080 (0.09)	SW030 (0.59)
	PFHxS+PFOS	None	None	None	SW002 (0.06) SW005 (<0.01) SW008 (0.53) SW021 (14.7) SW027 (0.99) SW033 (78.6) SW050 (<0.01) SW064 (1.50) SW076 (3.90) SW079 (0.73) SW080 (4.97)	SW030 (13.7)
March/April 2022	PFOS	None	None	None	SW008 (0.22) SW026 (0.02) SW028 (0.08) SW045 (0.04)	SW004 (0.10) SW007 (0.07) SW009 (1.05) SW015 (0.07)

Sampling Events	Compounds	First-time Detections (µg/L)	First-time exceedances of ecological criteria (µg/L)	First-time exceedances of human health criteria (µg/L)	New historical minimums (µg/L)	New historical maximums (µg/L)
					SW048 (0.38) SW049 (0.64) SW051 (0.04) SW056 (1.02) SW064 (0.60) SW098 (0.02)	SW027 (14.0) SW094 (1.24)
	PFOA	None	None	None	SW037 (0.10) SW048 (0.02) SW049 (0.03) SW059 (0.07) SW064 (0.02)	SW003 (0.58) SW009 (0.08) SW027 (1.22) SW056 (0.43) SW094 (0.12)
	PFHxS+PFOS	None	None	SW094 (2.27)	SW008 (0.34) SW026 (0.02) SW028 (0.12) SW037 (3.02) SW048 (0.50) SW049 (0.81) SW051 (0.02) SW064 (1.15) SW098 (0.02)	SW003 (6.95) SW004 (0.14) SW009 (1.80) SW015 (0.09) SW027 (35.5) SW056 (5.81) SW094 (2.27)
October/November 2022	PFOS	None	None	None	SW002 (0.31) SW007 (<0.01) SW008 (0.07) SW015 (<0.01) SW018 (<0.03) SW027 (0.16) SW041 (0.67) SW049 (0.44) SW064 (0.49) SW080 (1.22) SW094 (<0.01)	SW026 (0.35)
	PFOA	SW026 (0.02)	None	None	SW002 (0.04)	SW026 (0.02)

Sampling Events	Compounds	First-time Detections (µg/L)	First-time exceedances of ecological criteria (µg/L)	First-time exceedances of human health criteria (µg/L)	New historical minimums (µg/L)	New historical maximums (µg/L)
					SW015 (<0.01) SW027 (<0.01) SW041 (0.03) SW049 (<0.01) SW064 (<0.01) SW094 (<0.01)	SW027 (<0.01)
	PFHxS+PFOS	None	None	None	SW002 (0.50) SW008 (0.07) SW015 (<0.01) SW016 (0.02) SW018 (<0.01) SW027 (0.24) SW041 (1.19) SW049 (0.61) SW064 (0.73) SW080 (1.98) SW094 (<0.01)	SW026 (0.58) SW099 (0.12)
April/May 2023	PFOS	SW304 (8.47)	SW304 (8.47)	None	SW076 (1.50)	SW005 (11.4) SW052 (0.02) SW100 (0.14) SW304 (8.47)
	PFOA	SW304 (0.15)	None	None	SW002 (0.03) SW076 (0.18)	SW005 (0.25) SW304 (0.15)
	PFHxS+PFOS	SW304 (16.1)	None	SW304 (16.1)	SW002 (0.48) SW076 (3.30) SW099 (<0.02)	SW005 (17.6) SW052 (0.03) SW100 (0.28) SW304 (16.1)

7.3 Sediment Results

7.3.1 Sediment field observations

Sediment field observations are presented in **Table T4** in **Appendix B**. The sediment observations during the monitoring period generally comprised sandy silt, sand, silty clay or silt which were light brown to dark brown or light grey to grey, and generally included organic matter in the form of rootlets and/or algae and/or leaves.

7.3.2 Sediment analytical results

Sediment samples were co-located and collected with surface water samples during the sampling events between March 2021 and May 2023. Sediment PFAS analytical results are presented in **Table T5** in **Appendix B**. Monitoring activities and laboratory analytical certificates are presented in the sampling event factual reports in **Appendix F**. Sediment sample results for sum of PFOS and PFHxS and PFOA during the monitoring period are presented in **Figure 46** to **Figure 55**, in **Appendix A**. A summary of the sediment results is presented in **Table 20**. Deviations from the historical dataset for sediment are provided in **Table 21**.

There were no first-time detections of PFAS in sediment samples collected during the monitoring period. Trend analysis has not been conducted for sediment samples.

Table 20 Sediment analytical results summary

Sampling Event	No. of Samples	Compound	Concentration Range in Sampling Event	No. of Samples[1] with Concentration > LOR
March/April 2021	49	PFOA	<0.0002 – 0.0195 mg/kg	18
		PFOS	<0.0002 – 0.915 mg/kg	45
		PFOS+PFHxS	<0.0002 – 1.000 mg/kg	43
August 2021 (PMAP Delivery)	14	PFOA	<0.0002 – 0.0059 mg/kg	7
		PFOS	<0.002 – 3.13 mg/kg	13
		PFOS+PFHxS	<0.0002 – 3.15 mg/kg	13
October 2021	49	PFOA	<0.0002 – 0.0116 mg/kg	20
		PFOS	<0.0002 – 0.903 mg/kg	38
		PFOS+PFHxS	<0.0002 – 0.998 mg/kg	38
March/April 2022	49	PFOA	<0.0002 – 0.0155 mg/kg	14
		PFOS	<0.0002 – 1.82 mg/kg	35
		PFOS+PFHxS	<0.0002 – 1.93 mg/kg	35
October / November 2022	45	PFOA	<0.0002 – 0.025 mg/kg	17
		PFOS	<0.0002 – 1.02 mg/kg	36
		PFOS+PFHxS	<0.0002 – 1.1 mg/kg	36
April/May 2023	49	PFOA	<0.0002 – 0.018 mg/kg	15
		PFOS	<0.0004 – 1.70 mg/kg	38
		PFOS+PFHxS	<0.0002 – 1.94 mg/kg	41

Notes:

No. of samples does not include QA samples. Concentration ranges includes QA samples.

Table 21 Deviations from historical sediment dataset

Sampling Events	Compounds	First-time Detections (mg/kg)	New historical minimums (mg/kg)	New historical maximums (mg/kg)
March/April 2021	PFOS	SD038 (0.001) SD091 (0.0016)	SD003 (0.0092)	SD011 (0.747) SD018 (0.0104) SD028 (0.118) SD033 (0.915) SD036 (0.0059) SD039 (0.002) SD051 (0.0384) SD059 (0.244) SD076 (0.0795) SD079 (0.611) SD080 (0.806) SD090 (0.0008) SD091 (0.0016)
	PFOA	SD009 (0.0002) SD020 (0.0004)	SD003 (<0.0005)	SD009 (0.0002) SD020 (0.0004) SD027 (0.0018) SD030 (0.0025) SD033 (0.0195) SD034 (0.0005) SD059 (0.0046)
	PFHxS+PFOS	SD038 (0.001) SD091 (0.0016)	SD003 (0.0115)	SD008 (0.156) SD011 (0.782) SD018 (0.0104) SD028 (0.122) SD033 (1.00) SD039 (0.002) SD051 (0.0397) SD059 (0.264) SD076 (0.0926) SD079 (0.68) SD080 (0.924) SD090 (0.0008) SD091 (0.0016)
October 2021	PFOS	None	None	SD002 (0.0407) SD009 (0.0096) SD034 (0.0054) SD047 (<0.0016) SD049 (0.122) SD053 (0.035) SD076 (0.117) SD080 (0.903)
	PFOA	SD004 (0.0003) SD045 (0.0002)	SD079 (<0.0002)	SD002 (0.0009) SD004 (0.0003) SD009 (0.0004) SD080 (0.008)
	PFHxS+PFOS	None	None	SD002 (0.0434) SD009 (0.01) SD034 (0.0054) SD036 (<0.0005) SD047 (<0.0005) SD049 (0.130)

Sampling Events	Compounds	First-time Detections (mg/kg)	New historical minimums (mg/kg)	New historical maximums (mg/kg)
				SD076 (0.123) SD080 (0.998)
March/April 2022	PFOS	SD089 (0.0002)	SD002 (<0.0002) SD003 (<0.0006) SD004 (0.0013) SD005 (0.0023) SD008 (0.0004) SD011 (0.0009) SD030 (<0.0006) SD034 (0.0039) SD041 (0.001) SD048 (0.0087) SD049 (<0.0002) SD051 (0.0004) SD059 (<0.0004) SD076 (0.002) SD098 (<0.0035) SD099 (<0.0034)	SD009 (0.556) SD018 (0.0248) SD027 (0.142) SD036 (0.0096) SD056 (1.82)
	PFOA	None	SD041 (0.0002)	SD009 (0.0005) SD027 (0.0035) SD056 (0.0155)
	PFHxS+PFOS	SD089 (0.0002)	SD002 (<0.0002) SD003 (<0.0002) SD004 (0.0013) SD005 (0.0025) SD008 (0.0004) SD011 (0.0009) SD030 (<0.0002) SD034 (0.0042) SD041 (0.001) SD048 (0.0093) SD049 (<0.0002) SD051 (0.0004) SD059 (<0.0002) SD076 (0.002) SD098 (<0.0002) SD099 (<0.0002)	SD009 (0.0602) SD018 (0.028) SD027 (0.191) SD036 (0.010) SD056 (1.930)
October / November 2022	PFOS	None	SD018 (<0.008)	SD020 (0.0126) SD028 (0.453) SD036 (0.01) SD038 (0.0212) SD059 (1.020) SD064 (0.293) SD090 (0.0015)
	PFOA	SD038 (0.0005)	None	SD003 (0.0026) SD030 (0.0035) SD038 (0.0005) SD051 (0.0003) SD056 (0.0246) SD059 (0.0156) SD080 (0.010)
	PFHxS+PFOS	None	SD018 (<0.001)	SD020 (0.0133)

Sampling Events	Compounds	First-time Detections (mg/kg)	New historical minimums (mg/kg)	New historical maximums (mg/kg)
				SD028 (0.468) SD036 (0.01) SD038 (0.0229) SD056 (0.798) SD059 (1.10) SD064 (0.313) SD090 (0.0115)
April/May 2023	PFOS	SD025 (0.0005) SD304 (0.21)	SD020 (<0.009)	SD004 (0.084) SD008 (0.250) SD009 (0.0687) SD025 (0.0005) SD041 (1.620) SD045 (0.0082) SD052 (0.0015) SD079 (1.70) SD304 (0.210)
	PFOA	SD304 (0.0006)	None	SD079 (0.018) SD304 (0.0006)
	PFHxS+PFOS	SD025 (0.0005) SD304 (0.223)	SD020 (0.0006)	SD008 (0.262) SD009 (0.0725) SD025 (0.0005) SD041 (1.80) SD045 (0.0084) SD052 (0.0015) SD079 (1.94) SD304 (0.223)

8.0 Interpretive Analysis

8.1 Hydrogeology

8.1.1 Groundwater elevation and flow

The inferred groundwater flow directions in the Alluvium - Tertiary Formation aquifer and Walloon Coal Measures in the five sampling events during the monitoring period were consistent with previous reports with groundwater predominantly flowing towards the east, as discussed in **Section 7.1.4**. Close to the western boundary of the Base, there is the potential for groundwater in the Walloon Coal Measures to flow to the west towards the coal mine which is located beyond the western Base boundary. Additional monitoring points beyond the western boundary would be required to confirm this flow direction. The area of the coal mine to the west was considered in the 2018 DSI (CH2M Hill, 2018) to have a lower risk profile and no complete source-pathway-receptor linkages have been identified.

The hydrographs for targeted groundwater monitoring wells are presented in **Appendix D** (**Chart D1** to **D4**) and show responses of variable magnitude in groundwater elevation to the wet season rainfall events during the monitoring period. Historical groundwater level data (e.g., AECOM, 2021b) have shown that the groundwater elevation across the Base decreases during the dry season before recharging and increasing in elevation in the following wet season. This occurred during 2021 with a decrease in elevation of approximately 2 m. In 2022, this did not occur due to the above average rainfall due to the La Niña conditions (refer to **Section 6.3**) with groundwater elevations rising in the wet season and remaining steady during the dry season (April to October). Regular rainfall events occurred during the dry season 2022, which recharged the aquifer and maintained the elevated groundwater levels.

The hydrographs show responses in groundwater level in monitoring wells screened in all aquifer types (Alluvium, Tertiary Formation and Walloon Coal Measures). Monitoring well MW055S is screened in the Alluvium close to the Bremer River and showed a greater response to rainfall events. This is likely to be due to water flow in the river losing surface water to groundwater and recharging the aquifer. The groundwater elevation in monitoring well MW055D, screened in the Walloon Coal Measures, also showed a relatively large response in May 2022 but did not show a change in groundwater elevation during the large rainfall event in February 2022. The reasons for the variable responses are not known and may relate to the connectivity between surface water and groundwater.

Overall, the logger data indicated responses to rainfall events (or lack of response) that are consistent with datalogger results for 2019 to 2020. The higher seasonal rainfall amount in 2022 relative to annual averages, as noted in **Section 6.3**, resulted in slightly higher groundwater elevations in all wells compared to the 2020 to 2021 period. Relatively lower PFAS concentrations were detected in wells located close to surface water features. Sum of PFOS and PFHxS in groundwater samples from MW055S in 2021 and 2022 were between 0.14 and 0.81 µg/L compared to 2019 to 2021 (sum of PFOS and PFHxS was between 0.85 and 2.0 µg/L). The October 2022 concentration at MW055S was a new minimum concentration recorded demonstrating the dilution effect of large amounts of rainfall on PFAS concentrations within the aquifer. PFAS groundwater concentrations in MW028 in 2022 were also relatively lower with sum of PFOS and PFHxS in the range 4.9 to 16.3 µg/L compared to the range between 2019 and 2021 (30.7 to 60.1 µg/L).

The 2021 to 2023 data provide a line of evidence that the higher rainfall may have resulted in localised decreases in PFAS concentrations in groundwater from wells likely to be hydraulically connected to surface water due to dilution within the aquifer. Conversely, MW025, located close to the Bremer River, showed response to rainfall events and recorded new maximum PFAS concentrations in 2022 (sum of PFOS and PFHxS was 2.44 µg/L).

8.1.2 Vertical gradients

There are three sets of paired monitoring wells at the Base which provide information on vertical flow and potential connectivity between hydrogeological units. An evaluation of the groundwater elevation data is presented in **Table 22** below. The Alluvium / Walloon Coal Measures paired wells MW055S and MW055D indicate hydraulic connection between the aquifers.

Table 22 Paired monitoring wells and vertical gradient interpretation

Well	Aquifer	GW elevation (m AHD) April 2021	GW elevation (m AHD) October 2021	GW elevation (m AHD) March / April 2022	GW elevation (m AHD) October / November 2022	GW elevation (m AHD) April / May 2023	Screen interval (mbgl)	Vertical gradient (m/m)	Direction
MW055S	Alluvium	15.420	15.486	14.505	14.728	13.657	9-12	04/21: -0.003 10/21: -0.004 04/22: 0.022 10/22: 0.020 03/23: -0.002	No gradient.
MW055D	Walloon Coal Measures	15.481	15.566	14.056	14.311	14.044	28-34		
MW056S	Alluvium	8.143	8.275	9.783	Not gauged	Not gauged	6.5-9.5	04/21: 0.350 10/21: 0.347 03/22: -0.003	Potential downward vertical gradient from Alluvium to Tertiary Formation in 2021. Hydraulic connection in March/April 2022.
MW056I	Tertiary Formation	5.164	5.322	9.812	Not gauged	8.730	15-18		
MW057S	Alluvium	9.454	9.499	11.979	12.487	10.787	6.5-9.5	04/21: -0.090 10/21: -0.123 04/22: 0.150 10/22: 0.252	Potential for downward vertical gradient from Alluvium to Tertiary Formation or upward vertical gradient from Tertiary Formation to Alluvium
MW057I	Tertiary Formation	9.991	10.234	11.084	10.974	10.822	12.5-15.5		

A slight upward vertical flow direction between Alluvium and Walloon Coal Measures was reported at MW055S/D in the DSI (CH2M Hill, 2018) and 2020 AIR, and 2021 to 2023 data indicate the aquifers are connected at this location. One Alluvium/Tertiary Formation pair (MW056S/I) indicated potential downward vertical gradient from Alluvium to Tertiary Formation during 2021, however, in March 2022, the measurements did not indicate a gradient and indicated the aquifers were connected. It is noted that the groundwater level in MW056I, which is screened in the Tertiary Formation rose by over 4.5 m compared to 2021 measurements. The change is attributed to the high rainfall event during February 2022, which appears to have affected the groundwater level in MW056I more significantly compared to MW056S. Another pair (MW057S/I) indicated potential for both upward and downward vertical flow between Alluvium and Tertiary Formation. The hydrogeological measurements indicate the potential for flow between the different geological formations. PFAS in groundwater will migrate off-base in flowing groundwater, through interaction between aquifers in accordance with the hydraulic gradient.

8.2 Groundwater Temporal Trends

Groundwater results for sum of PFOS and PFHxS compared to assessment criteria are provided in **Figure 16** to **Figure 25** in **Appendix A** with PFOA results presented in **Figure 26** and **Figure 35**. The relationship between the current (first-time detection or new exceedance) and historical results (range, historical maximum and minimum) is summarised in **Table 13** and **Table 14**, in **Section 7.1.6**.

PFAS concentrations were generally similar to previous (historical) results reported in the DSI (CH2M Hill, 2018), 2019 monitoring reports (CH2M Hill, 2020a, b) and 2020 AIR (AECOM, 2021b).

Temporal changes in PFOS, sum of PFOS and PFHxS and PFOA concentrations have been evaluated using Mann-Kendall analysis (refer to **Appendix D**). Temporal changes in sum of PFOS and PFHxS are also shown on **Charts D5** to **D9** also presented in **Appendix D**. A summary of the Mann-Kendall results is presented in **Table 23**. Overall, most wells have either a stable trend, no trend or a decreasing trend. Fourteen wells have an increasing, or probably increasing, trend of either PFOS, sum of PFOS and PFHxS and PFOA, as summarised in **Table 23**. Mann-Kendall trend analysis was only completed on wells where sufficient historical data are available (equal or greater than eight datapoints at each location) and where at least 20% of the sample results are at detectable concentrations above the LOR.

Table 23 Summary of Mann-Kendall statistical analysis

Analyte	Wells with an increasing trend	Wells with a decreasing trend	Wells with a stable trend or no trend
PFOS	MW012, MW025, MW029, MW030, MW032, MW037, MW043, MW047, MW050, MW054S	MW006, MW007, MW042, MW046, MW048, MW049, MW055S	MW002, MW005, MW020, MW021, MW022, MW023, MW026, MW028, MW031, MW033, MW034, MW036, MW041, MW054D, MW056I, MW056S, MW057S
Sum of PFOS+PFHxS	MW012, MW021, MW024, MW025, MW029, MW030, MW032, MW043, MW047, MW050, MW054S, MW056I	MW006, MW007, MW022, MW042, MW046, MW048, MW049	MW005, MW020, MW023, MW024, MW026, MW028, MW031, MW033, MW034, MW036, MW037, MW041, MW044, MW054D, MW055S, MW056S, MW057I, MW057S
PFOA	MW021, MW029, MW030, MW032, MW047, MW057S	MW007, MW042, MW046, MW048, MW049	MW006, MW020, MW022, MW023, MW028, MW037, MW055S

The highest PFAS concentrations during the monitoring period were detected in monitoring wells located down-hydraulic gradient of the CPSAs identified during the previous investigations. This is consistent with results from 2019 and 2020. The results indicate that sum of PFOS and PFHxS concentrations close to source areas have been variable. The following subsections provide a summary

of the spatial distribution and concentration trends of PFAS in groundwater, at and down-gradient of, each major, moderate and minor source area as listed in **Section 2.3.1**. Monitoring wells are located approximately down-gradient of all major and moderate CPSAs with two exceptions. Due to the loss of MW015, there are no monitoring wells close to CPSA Y. Due to the loss of MW039 and MW040, MW008 and MW009, there are limited groundwater data available down-gradient of CPSA A. This has been considered when assessing the data.

Further discussion of the groundwater results for the major source areas is provided in **Section 8.2.1** to **8.2.12**.

8.2.1 CPSA A Former Topside Aviation Training Area and Current FTA Pad

The PMAP identified the former topside aviation training area and current FTA pad to be one of the key PFAS source areas at the Base, presenting a high relative contribution to risk. Groundwater beneath CPSA A flows to the northeast. Due to the loss of monitoring wells close to CPSA A (e.g. MW039, MW040) and down-gradient (i.e. MW009), there is limited monitoring well coverage adjacent to and down-gradient of this source area, refer to **Figure 2** in **Appendix A**. There is currently one well within the CPSA A (MW033) and two wells on the CPSA A boundary (namely MW002 and MW046).

Monitoring wells MW002 and MW033 are screened in the Walloon Coal Measures to the northwest and cross-hydraulic gradient of CPSA A, respectively. Except for trace concentrations of sum of PFOS and PFHxS (0.02 µg/L) in MW002 in April 2021 and MW033 in October 2022 and April 2023, PFAS were not detected above the LOR in these wells, refer to **Table 24**. This indicates PFAS have not migrated vertically to the Walloon Coal Measures beneath CPSA A and therefore there is no change to the risk profile.

PFAS was detected in groundwater in two monitoring wells (MW025 and MW034), located further northeast, adjacent to Bremer River, approximately 1.7 km northeast of CPSA A. Both wells are screened in the Alluvium. The concentration of sum of PFOS and PFHxS at MW025 in April 2022 and October 2022 was 1.63 µg/L and 2.44 µg/L, respectively. These new maximum concentrations (which are slighlty higher compared to the previous maximum concentration of 1.59 µg/L in October 2017), indicate concentrations have slightly increased over the monitoring period, which potentially could be natural variability within the expected laboratory variability. Concentrations of sum of PFOS and PFHxS in the April 2023 monitoring round have decreased. Analysis of results using Mann-Kendall, confirmed an increasing trend in groundwater at MW025.

Monitoring well MW035 is located approximately 1.7 km to the east of CPSA A and approximately 1.0 km south of MW025. PFAS have not been detected in any of the 11 groundwater samples collected from this well between 2017 and 2023, indicating PFAS in groundwater sourced from CPSA A does not extend as far east as MW035. Monitoring well MW035 is also the closest well down-gradient (to northeast) of CPSA U (33 Squadron Hangar). As PFAS were not detected in groundwater from MW035, this supports the finding in the DSI (CH2M Hill, 2018) that this source area has a relatively low contribution to risk.

PFAS concentrations in monitoring well MW034 were variable during the monitoring period and above the historical range. This monitoring well is screened in Alluvium and located close to discharge point 5 (DP5) along the Bremer River, where surface water may be discharging to groundwater. Dataloggers installed in wells along the Bremer River have shown mixed responses following rainfall events (refer to **Section 8.1.1**) indicating the potential for interaction between surface water and groundwater at locations close to the Bremer River. Sum of PFOS and PFHxS have been detected in post-wet season sampling (in April / May) in 2021, 2022 and 2023 suggesting the detections are related to seasonal fluctuations, refer to **Chart D9, Appendix D**. PFAS is not detected during dry season sampling events at MW034. The temporary increase in PFAS concentration at MW034 in post-wet season sampling events is noted to have followed a change in groundwater elevation after rainfall events. Following the large rainfall event in February 2022, PFAS concentrations decreased (being reported at the detection limit), potentially due to dilution effects from surface water infiltration from the Bremer River.

Due to the loss of source area and some down-gradient monitoring wells (including MW008, MW009, MW039 and MW040), the extent of PFAS in groundwater between the key Base source area (CPSA A) and MW025, MW034 and MW035, close to the Bremer River is currently uncertain. Based on the available groundwater results from down-gradient wells, no changes have occurred to the risk profile presented in the PMAP (Defence, 2020).

Table 24 CPSA A Former Topside Aviation Training Area and Current FTA Pad

Location ID	Analyte	Historical Range	OMP Events (Current Period)	Mann-Kendall Trend	
		Min – Max (µg/L)	Min – Max (µg/L)	Trend	Confidence Factor
MW002	PFOS+PFHxS	<0.01-<0.05	<0.01-0.02	-	-
	PFOA	<0.01-<0.05	<0.01	-	-
MW033	PFOS+PFHxS	<0.01-0.06	<0.01-0.02	No trend	69.4%
	PFOA	<0.01-<0.05	<0.01-<0.02	-	-
MW025	PFOS+PFHxS	<0.01-1.59	0.72-2.44	Increasing	99.4%
	PFOA	<0.01-0.08	0.02-0.17	-	-
MW034	PFOS+PFHxS	<0.01-0.21	<0.01-0.59	No trend	54.0%
	PFOA	<0.01	<0.01	-	-
MW035	PFOS+PFHxS	<0.01	<0.01	-	-
	PFOA	<0.01	<0.01	-	-

Notes: - Data could not be analysed due to results not exceeding the LOR or not meeting the criteria for analysis.

8.2.2 CPSA B Hangar 410 and Former Landfill

CPSA B Hangar 410 and former landfill is in the southern portion of the Base, refer to **Figure 2** in **Appendix A**. There are no groundwater wells located within the CPSA B boundary. Groundwater is inferred to flow towards Warrill Creek, approximately 400 m to the south/southeast, as shown on inferred groundwater contour maps (e.g. **Figure 6** in **Appendix A**)[10].

Monitoring well MW047 is located approximately 175 m down-gradient of CPSA B and reported sum of PFOS and PFHxS concentrations between 2.8 µg/L (in April 2021) and 16.7 µg/L (in October 2022) during the monitoring period, refer to **Table 25**. The October 2022 result was a new maximum concentration, slightly exceeding the previous maximum of 13.5 µg/L (from April 2020). As shown on the temporal graph for sum of PFOS and PFHxS (see **Chart D7** in **Appendix D**), MW047 has exhibited variability with concentrations increasing and decreasing with occasional order of magnitude changes. Sum of PFOS and PFHxS concentrations have fluctuated between 0.64 and 16.7 µg/L during the monitoring period. Analysis using Mann-Kendall confirmed increasing trends in PFOS, sum of PFOS and PFHxS and PFOA at this location. There does not appear to be a clear wet / dry season trend with concentration peaks reported in both seasons. Overall, the results do not indicate notable changes to PFAS concentrations down-gradient of CPSA B and therefore there are no changes to the risk profile as presented in the PMAP (Defence, 2020).

Table 25 CPSA B Hangar 410 and Former Landfill

Location ID	Analyte	Historical Range	OMP Events (Current Period)	Mann-Kendall Trend	
		Min – Max (µg/L)	Min – Max (µg/L)	Trend	Confidence Factor
MW047	PFOS+PFHxS	0.03 -13.5	2.64 – 16.7	Increasing	99.2%
	PFOA	<0.01-0.26	0.025-0.52	Increasing	99.9%

[10] Note that groundwater flow direction is perpendicular to the contours shown, with flow from the higher groundwater level to the lower groundwater level.

8.2.3 CPSA C Frog's Hollow Former Fire Training School

The former Fire Training School is in the southwestern portion of the Base. Groundwater in the Alluvium is inferred to flow southeast towards Warrill Creek, which is 450 m from CPSA C. Monitoring well MW037 is screened in the Alluvium aquifer between 5 and 10 mbgl. The concentration of sum of PFOS and PFHxS and PFOA in this well is stable as indicated by Mann-Kendall analysis, refer to **Table 26**. Conversely, the PFOS trend was identified to be increasing. The difference is due to relative changes in PFHxS and PFOS concentrations. The temporal graph **Chart D7** in **Appendix D** indicated concentrations have decreased since the peak in late 2017 and have since stabilised. There is no change to the nature of PFAS or the risk profile. Results for wells down-gradient of CPSA C are discussed in the following sections.

Table 26 CPSA C Frog's Hollow Former Training School

Location ID	Analyte	Historical Range	OMP Events (Current Period)	Mann-Kendall Trend	
		Min – Max (µg/L)	Min – Max (µg/L)	Trend	Confidence Factor
MW037	PFOS+PFHxS	4.28-6.54	3.63-6.82	Stable	69.4%
	PFOA	0.02-0.04	0.03-0.12	No trend	82.1%

8.2.4 CPSA D Sewage Treatment Plant and CPSA E Historic Containment Pond

CPSA D is located adjacent to Frog's Hollow Gully and CPSA E is located approximately 500 m to the east of CPSA D. Groundwater in this area is inferred to flow to the southeast. MW021 is located within CPSA D with MW032 located approximately 200 m down-gradient. MW048 is located approximately 500 m cross/down-gradient of CPSA D, within CPSA E. All wells are screened in the Alluvium.

Sum of PFOS and PFHxS concentrations in groundwater samples from monitoring well MW021 during the monitoring period were higher relative to 2019 to 2020 with three new maximum concentrations recorded in April 2021 (81.3 µg/L), October 2022 (88.0 µg/L) and April 2023 (142 µg/L), refer to **Table 27**. Mann-Kendall analysis indicated an increasing trend at MW021.

MW032, located further down-gradient reported relatively lower concentrations of sum of PFOS and PFHxS (34.8 µg/L in March/April 2022 and 37.4 µg/L in October/November 2022). Sum of PFOS and PFHxS concentrations in MW032 reported new maximums on three occasions, indicating some variability in the concentrations, refer to **Chart D7** in **Appendix D**. The April/May 2023 were within the historical range. Mann-Kendall analysis indicated increasing trends in this well for PFOS, sum of PFOS and PFHxS and PFOA.

PFAS in groundwater at MW048, located cross/down-gradient of CPSA D and within CPSA E reported PFAS concentrations within the historical range. Mann-Kendall results indicated decreasing concentrations at this location for PFOS, sum of PFOS and PFHxS and PFOA.

MW054S/D are located further down-gradient of CPSA D and E, beyond the Base boundary and on the southern side of Warrill Creek. An increase in sum of PFOS and PFHxS concentration occurred in MW054S in 2022 (screened in the Alluvium) with new maximum sum of PFOS and PFHxS concentrations recorded (0.24 µg/L in April 2022 and 0.38 µg/L in November 2022), relatively higher than the previous range (<0.01 to 0.14 µg/L). A consistent sum of PFOS and PFHxS concentration of 0.35 µg/L was recorded in April/May 2023. The increase is potentially due to surface water containing PFAS recharging to groundwater. This is based on the surface water sampling locations in Warrill Creek having detectable PFAS (nearby surface water sampling location SW005 reported sum of PFOS and PFHxS at 1.7 µg/L in October/November 2022) and Warrill Creek being previously identified as potentially a losing system, as reported in the DSI (CH2M Hill, 2018). Ongoing monitoring will indicate if the PFAS in groundwater is extending within the Alluvium-Tertiary Formation aquifer south of Warrill Creek. As no wells are present further south, the extent is uncertain.

MW054D is screened in the deeper Walloon Coal Measures and PFAS were not detected above the limit of reporting in groundwater samples collected during the monitoring period, indicating the groundwater impacts have not migrated vertically from the Alluvium to Walloon Coal Measures.

Although the PFAS groundwater data indicate increasing trends in groundwater down-gradient of these CPSAs, the PFAS concentrations are reported in the same order of magnitude as previous results, and the risk profile is therefore unchanged.

Table 27 CPSA D Sewage Treatment Plant and CPSA E Historic Containment Pond

Location ID	Analyte	Historical Range	OMP Events (Current Period)	Mann-Kendall Trend	
		Min – Max (µg/L)	Min – Max (µg/L)	Trend	Confidence Factor
MW021	PFOS+PFHxS	53.9-75.3	59.9-142	Probably Increasing	91.0%
	PFOA	1.44-1.72	2.19-4.45	Increasing	99.9%
MW032	PFOS+PFHxS	24.8-29.8	27.8-37.4	Increasing	98.8%
	PFOA	1.63-2.01	1.86-2.67	Probably Increasing	94.0%
MW048	PFOS+PFHxS	14.7-25.3	2.34-20.9	Decreasing	97.7%
	PFOA	0.29-0.76	0.04-0.26	Decreasing	99.9%
MW054S	PFOS+PFHxS	<0.01-0.14	0.07-0.38	Increasing	99.9%
	PFOA	<0.01-<0.10	<0.01-0.01	-	-
MW054D	PFOS+PFHxS	<0.01-0.07	<0.01-0.01	No trend	72.9%
	PFOA	<0.01	<0.01	-	-

8.2.5 CPSA G Former FTA and Operations Testing Area and CPSA CC Former Landfill

CPSA G and CPSA CC are located adjacent to the central southern base boundary adjacent to Warrill Creek, refer **Figure 2**, **Appendix A**. CPSA AA and FF are also located in this area. The concentration of sum of PFOS and PFHxS in groundwater samples from MW050 during the monitoring period, which is screened in the Alluvium aquifer, had two new maximum concentrations in April 2021 and April 2023 and Mann-Kendall analysis indicated an increasing trend at this location, refer to **Table 28**. The trend potentially indicates migration of PFAS in groundwater at relatively low concentrations from an up-gradient source, potentially CPSA G or CC. A nearby up-gradient monitoring well, MW022 located within CPSA CC (former landfill), recorded new minimum sum of PFOS and PFHxS concentrations in 2022 (4.2 µg/L in April and 1.6 µg/L in November) compared to the historical range (9.0 to 31.9 µg/L) indicating a decreasing trend (as supported by Mann-Kendall analysis), refer to **Chart D7** in **Appendix D**. This indicated that PFAS concentrations at CPSA G and CC (and CPSA AA and FF) are likely to be stable and the risk profile is unchanged to that presented in the PMAP (Defence, 2020).

Table 28 CPSA G Former FTA and Operations Testing Area and DPSA CC Former Landfill

Location ID	Analyte	Historical Range	OMP Events (Current Period)	Mann-Kendall Trend	
		Min – Max (µg/L)	Min – Max (µg/L)	Trend	Confidence Factor
MW050	PFOS+PFHxS	<0.01-0.024	0.08-0.35	Increasing	99.7%
	PFOA	<0.01	<0.01	-	-
MW022	PFOS+PFHxS	9.3-31.9	1.64-18.1	Decreasing	98.8%
	PFOA	0.23-0.35	0.03-0.56	Stable	72.8%

Notes: - Data could not be analysed due to results not exceeding the LOR or not meeting the criteria for analysis.

8.2.6 CPSA J Former FTA, Operations Testing Area and Bomb Replacement Apron

CPSA J is a Former FTA, Operations Testing Area and Bomb Replacement Apron located in the southeastern portion of the Base. Monitoring well MW005 is located down-gradient (east) of CPSA J and reported similar sum of PFOS and PFHxS concentrations, between 0.05 µg/L and 0.08 µg/L, in monitoring rounds between October 2021 and April 2023, refer to **Table 29**. PFOA was not detected above the limit of reporting. The reported concentrations are within the historical range for MW005, refer to **Chart D8** in **Appendix D**. Mann-Kendall analysis did not identify a trend. The results indicate there has been no change in the nature of PFAS in groundwater during the monitoring period at this location and no change to the risk profile presented in the PMAP (Defence, 2020).

Table 29 CPSA J Former FTA, Operations Testing Area and Bomb Replacement Apron

Location ID	Analyte	Historical Range	OMP Events (Current Period)	Mann-Kendall Trend	
		Min – Max (µg/L)	Min – Max (µg/L)	Trend	Confidence Factor
MW005	PFOS+PFHxS	<0.01-0.41	<0.01-0.08	No trend	87.5%
	PFOA	<0.01-0.02	<0.01	-	-

Notes: - Data could not be analysed due to results not exceeding the LOR or not meeting the criteria for analysis.

8.2.7 CPSA M Fuel Farm and CPSA N Fire Station

CPSA M and N are located adjacent to each other in the centre of the Base. MW056 previously provided groundwater monitoring data at these source areas, however, this bore was lost in 2019 and has not been replaced so no proximal groundwater data are available for CPSA M and N. Up-gradient monitoring well (MW309) is located to the west of CPSA M and N and monitors the Tertiary Formation. Sum of PFOS and PFHxS have not been detected in groundwater at this location since 2019. A cross-gradient well (MW012) is located to the south, also screened within the Tertiary Formation, and in April 2022 a new maximum sum of PFOS and PFHxS was recorded (0.17 µg/L), which increased by one order of magnitude compared to October 2021 (0.02 µg/L). The concentration decreased to 0.06 µg/L in October 2022 and April 2023, however, Mann-Kendall analysis indicates an increasing trend for PFOS and sum of PFOS and PFHxS in this well, refer to **Table 30**. This may indicate a previously unknown minor local source to the west or south of CPSA M and N.

The nearest down-gradient monitoring well (MW006), is located approximately 1 km to the east-southeast (across the runway), slightly cross-gradient to the source areas and screened within the shallow Alluvium aquifer. This well reported sum of PFOS and PFHxS within the historical range during the monitoring period, with concentrations between 52.5 and 56.7 µg/L. Monitoring wells MW023, MW028, MW029, MW056S and MW056I are further east and potentially down-gradient of MW006 and the CPSAs.

Historical PFAS concentrations in MW028 (sum of PFOS and PFHxS in the range 30.7 to 83 µg/L) have been similar to concentrations in MW006, however, since October 2022 relatively lower concentrations were reported (between 4.9 and 26.4 µg/L).

Lower concentrations were recorded in groundwater samples from MW023 during the monitoring period (0.4 to 1.2 µg/L PFOS and PFHxS), with these results within the historical range for this well. New maximum sum of PFOS and PFHxS concentrations were recorded at MW029 in 2022 (11.2 to 11.8 µg/L PFOS and PFHxS), which is a slight increase compared to the historical range (4.3 to 9.9 µg/L) and Mann-Kendall analysis confirmed an increasing trend at this location.

The collection of groundwater samples from MW056S and MW056I was variable during the monitoring period due to the presence of dense vegetation preventing access on occasion. The wells are located off-Base, approximately 750 m to the east of MW028 and MW029 and have occasionally detected PFAS at concentrations close to detection limits. Statistical analysis did not identify a trend in MW056S, while MW056I had a probably increasing trend for sum of PFHxS and PFOS. The occasional detections are considered to be natural variability within the expected laboratory varaibility and may indicate surface water and groundwater interaction following the intense rainfall events in 2022.

Based on the above results, the most likely PFAS source for groundwater at MW006, MW023, MW028 and MW029 is considered to be CPSAs M and N. Other CPSA including CPSA BB, L and O are also potential source areas contributing to PFAS concentrations, however, they have not been identified as having a high, moderate or low relative contribution to risk, refer to **Section 2.3**. **Chart D8** in **Appendix D** indicates concentrations in the down-gradient wells have been broadly stable (of a similar magnitude) since 2017. Based on these results, the extent of PFAS and risk profile associated with these CPSAs is unchanged from the PMAP (Defence, 2020).

Table 30 CPSA M Fuel Farm and CPSA N Fire Station

Location ID	Analyte	Historical Range	OMP Events (Current Period)	Mann-Kendall Trend	
		Min – Max (µg/L)	Min – Max (µg/L)	Trend	Confidence Factor
MW309	PFOS+PFHxS	<0.01-1.4	<0.01-<0.05	-	-
	PFOA	<0.01-0.04	<0.01-<0.05	-	-
MW012	PFOS+PFHxS	<0.01-<0.05	0.01-0.17	Increasing	99.7%
	PFOA	<0.01-<0.05	<0.01-<0.02	-	-
MW006	PFOS+PFHxS	56.3-187	52.2-56.7	Decreasing	99.9%
	PFOA	0.75-2.46	0.99-1.07	Stable	56.0%
MW023	PFOS+PFHxS	<0.01-0.38	0.23-1.15	No trend	69.4%
	PFOA	<0.01-0.02	<0.01	Stable	58.0%
MW028	PFOS+PFHxS	30.7-83.0	4.87-66.5	Stable	82.1%
	PFOA	0.87-2.10	0.13-1.98	Stable	82.1%
MW029	PFOS+PFHxS	5.79-8.91	8.27-11.8	Increasing	99.7%
	PFOA	0.14-0.27	0.20-0.32	Increasing	99.8%
MW056S	PFOS+PFHxS	<0.01-0.02	<0.01-0.01	No trend	58.0%
	PFOA	<0.01-<0.02	<0.01	-	-
MW056I	PFOS+PFHxS	<0.01-0.02	<0.01-0.03	Probably Increasing	94.6%
	PFOA	<0.01	<0.01	-	-

Notes: - Data could not be analysed due to results not exceeding the LOR or not meeting the criteria for analysis.

8.2.8 CPSA V AFFF Wastewater Holding Tank

The highest PFAS concentration detected in groundwater at the Base during the monitoring period was recorded at MW046 (121 to 420 µg/L sum of PFOS and PFHxS), located adjacent to, and down-gradient of CPSA V, the AFFF wastewater holding tank, refer to **Table 31**. The concentrations reported during the monitoring period was within the historical range for MW046. This monitoring well also recorded the highest PFAS concentration at the Base in 2020. Mann Kendall analysis indicates a decreasing trend in sum of PFOS and PFHxS (as well as PFOS and PFOA) and a new minimum was recorded in April 2023, refer to **Chart D5** in **Appendix D**. The reduction may reflect attenuation and dispersion of PFAS.

Groundwater beneath CPSA V flows to the northeast towards the Bremer River. Sum of PFOS and PFHxS in groundwater directly east of MW046 on the eastern side of the runway, at MW007, was reported between 6.0 and 53.4 µg/L during the monitoring period. Relatively lower concentrations were recorded during 2022 monitoring events (including a new minimum in April 2022), refer to **Chart D9**, **Appendix D**. The decrease may be due to dilution of the aquifer from surface water infiltration and recharge following the high rainfall events during 2022. As the results during the monitoring period are broadly consistent with historical results, the extent of PFAS and risk profile associated with CPSA V is unchanged from the PMAP (Defence, 2020).

Table 31 CPSA V AFFF Wastewater Holding Tank

Location ID	Analyte	Historical Range	OMP Events (Current Period)	Mann-Kendall Trend	
		Min – Max (µg/L)	Min – Max (µg/L)	Trend	Confidence Factor
MW046	PFOS+PFHxS	381-520	121-420	Decreasing	98.4%
	PFOA	32.4-36.0	7.75-40.3	Probably Decreasing	91.1%
MW007	PFOS+PFHxS	47.7-109	5.95-53.4	Decreasing	99.7%
	PFOA	1.23-2.0	0.11-1.35	Probably Decreasing	94.0%

8.2.9 CPSA W Fire Fighting Training School

PFAS concentrations in groundwater samples from monitoring wells installed within the Walloon Coal Measures at CPSA W, have generally been reported close to, or less than, the limit of reporting except in samples from MW030 located on the northern boundary of CPSA W. Increasing trends were identified at MW030 for sum of PFOS and PFHxS, PFOS and PFOA.

Sum of PFOS and PFHxS concentrations have steadily increased from a 0.32 µg/L in February 2017 to 12.9 µg/L in May 2023, with each event since April 2020 recording a new maximum concentration, refer to **Chart D6** in **Appendix D** and **Table 32**. The samples from MW030 are dominated by PFHxS (98%). PFOA has increased from a non-detect in 2017 to 1.37 µg/L in May 2023. Due to the limited number of wells and variability in groundwater elevation recorded in the Walloon Coal Measures in this portion of the Management Area, the localised groundwater flow directions are uncertain. As there is potential for localised flow to the west, the spatial distribution of PFAS at this location is uncertain.

Two other monitoring wells are located within this source area, MW042, located to the south along the western boundary of the source area, and MW043 located further south of MW042. An increasing trend was identified for sum of PFOS and PFHxS and PFOS in MW043 with a new maximum sum of PFOS and PFHxS concentration reported in April 2023 (0.70 µg/L). Conversely, a decreasing trend was identified at MW042 with concentrations of sum of PFOS and PFHxS during the reporting period between 0.01 and 0.07 µg/L. The results indicate MW043 may be close to a localised source.

PFAS concentrations in the monitoring well cross-gradient to the north (MW033), reported sum of PFOS and PFHxS concentrations that did not exceed, or were close to, the limit of reporting (up to 0.02 µg/L) during the monitoring period. No trend was identified for MW033. This indicates the increase in PFAS concentrations at MW030 has not impacted the location of MW033.

Overall, the results indicate the PFAS source at CPSA W is locally affecting groundwater quality in the Walloon Coal Measures aquifer with impacts extending to the north (at MW030) and the south (at MW043). The potential for groundwater flow, and PFAS migration, down-gradient to the west/northwest is uncertain as there are no wells in this direction and a down-gradient monitoring well would be required to address this data gap. Ongoing monitoring will provide information about the nature of PFAS to the north and southwest at CPSA W.

Table 32 CPSA W Fire Fighting Training School

Location ID	Analyte	Historical Range	OMP Events (Current Period)	Mann-Kendall Trend	
		Min – Max (µg/L)	Min – Max (µg/L)	Trend	Confidence Factor
MW030	PFOS+PFHxS	0.32-2.91	2.96-12.9	Increasing	>99.9%
	PFOA	<0.01-1.37	0.2-0.32	Increasing	99.8%
MW033	PFOS+PFHxS	<0.01-0.06	<0.01-0.02	No trend	69.4%
	PFOA	<0.01-<0.05	<0.01-<0.02	-	-

Location ID	Analyte	Historical Range	OMP Events (Current Period)	Mann-Kendall Trend	
		Min – Max (µg/L)	Min – Max (µg/L)	Trend	Confidence Factor
MW042	PFOS+PFHxS	<0.01-424	<0.01-0.07	Decreasing	96.4%
	PFOA	<0.01-38.0	<0.01	Decreasing	95.5%
MW043	PFOS+PFHxS	<0.01-0.15	0.01-0.70	Increasing	98.2%
	PFOA	<0.01-<0.10	<0.01-0.02	-	-

Notes: - Data could not be analysed due to results not exceeding the LOR or not meeting the criteria for analysis.

8.2.10 CPSA X Former Structural and Open Pit FTA

CPSA X is the Former Structural and Open Pit FTA located along the central portion of the western boundary. MW041 is located in the vicinity of CPSA X and east of CPSA W. Groundwater from this well recorded a new maximum concentration of 0.44 µg/L sum of PFOS and PFHxS in April 2022, refer to **Table 33**. The previous maximum was 0.08 µg/L. The concentration subsequently decreased and did not exceed the limit of reporting in April 2023. Mann-Kendall analysis indicated no trend in this well. The relatively low concentration of the key contaminants, PFHxS, PFOS and PFOA compared to other source areas indicated that this area is not a large source of PFAS to groundwater. Sum of PFOS and PFHxS has been detected four times in MW041 since 2018, refer to **Chart D6** in **Appendix D**. As the results are broadly consistent with historical results, there is no change to the nature and extent of PFAS in groundwater over the monitoring period and the risk profile remains unchanged from that presented in the PMAP (Defence, 2020).

Table 33 CPSA X Former Structural and Open Pit FTA

Location ID	Analyte	Historical Range	OMP Events (Current Period)	Mann-Kendall Trend	
		Min – Max (µg/L)	Min – Max (µg/L)	Trend	Confidence Factor
MW041	PFOS+PFHxS	<0.05-0.08	<0.01-0.44	No trend	69.4%
	PFOA	<0.01-<0.1	<0.01-<0.02	-	-

Notes: - Data could not be analysed due to results not exceeding the LOR or not meeting the criteria for analysis.

8.2.11 CPSA Z Fuel UST with AFFF listing

CPSA Z is located in the central southern portion of the Base. Monitoring well MW020 is located down-gradient of this source area and screened within the Tertiary Formation, refer to **Figure 4**, **Appendix A**. PFAS concentrations have consistently been detected at this location since monitoring commenced in 2017. MW020 results have exhibited variability, by an order of magnitude, which is attributed to seasonal effects, refer to **Chart D8** in **Appendix D**. New maximum concentrations for sum of PFOS and PFHxS were reported in April 2021, April 2022 and April 2023 (40.9 to 134 µg/L), however, much lower concentrations were recorded during October sampling events in 2021 and 2022 (12.8 and 3.25 µg/L, respectively), refer to **Table 34**. Due to the variability, Mann-Kendall analysis did not identify a trend in this well. The reason for the seasonal change in concentration is not known but is likely to be due to increased leaching during the wet season of a secondary soil source area. The groundwater table elevation is stable with less than 1 centimetre (cm) difference between three gauging events between April 2021 and April 2022.

As groundwater flow is inferred to be to the southeast at this location, the only down-gradient monitoring wells (MW005, MW057S and MW057I) are located 1.5 to 2.0 km away. PFAS concentrations in groundwater from these distal monitoring wells have been typically reported close to the limit of reporting. During the monitoring period, concentrations in MW005 and MW057I were consistent with the historical results. Sum of PFOS and PFHxS at MW057S reported a new maximum of 2.6 µg/L in October/November 2022, which decreased to 1.3 µg/L in April/May 2023, however, no trend was identified in this well by Mann-Kendall analysis.

The concentration detected in MW057S in October/November 2022 represented a new exceedance of the recreational water use guideline value (HEPA, 2020). MW057S is located immediately adjacent to Warrill Creek. Although the wells do not have a logger installed it is likely that MW057S is hydraulically connected to Warrill Creek. There are no nearby surface water sampling locations to MW057S, with the nearest upstream (SW020) and downstream (SW100) locations recording much lower sum of PFOS and PFHxS concentrations (up to 0.11 µg/L) compared to the concentrations recorded at MW057S. There is a discharge point upstream of MW057S (DP13), however, there are no surface water data available for this location.

The increase in PFAS concentration at MW057S, is potentially related to migration of PFAS from up-gradient sources or could potentially relate to discharge from on-Base drains from DP13, or alternatively, the increase may be temporary and reflect mobilisation of PFAS during flooding following the large rainfall event in February 2022. The increase in concentrations may indicate the extent of PFAS in groundwater has migrated laterally further east beyond Warrill Creek, however, as there are no wells further east, the extent is uncertain. Mann Kendall analysis did not identify a trend.

PFAS concentrations at MW057I (which is screened in the deeper Tertiary Formation) were reported to be at, or less than, the limit of reporting during the monitoring period, which is consistent with historical results indicating limited vertical migration in the connected aquifer.

Ongoing monitoring will provide information about the nature of PFAS at these locations. The risk profile remains unchanged for CPSA Z.

Table 34 CPSA Z Fuel UST with AFFF Listing

Location ID	Analyte	Historical Range	OMP Events (Current Period)	Mann-Kendall Trend	
		Min – Max (µg/L)	Min – Max (µg/L)	Trend	Confidence Factor
MW020	PFOS+PFHxS	6.82-22.7	3.25-134	No trend	69.4%
	PFOA	0.52-1.33	0.06-2.60	No trend	76.2%
Down-gradient locations					
MW005	PFOS+PFHxS	<0.01-0.41	0.05-0.08	No trend	87.5%
	PFOA	<0.01-0.02	<0.01	-	-
MW057S	PFOS+PFHxS	0.06-0.2	0.05-2.57	No trend	59.0%
	PFOA	<0.01	<0.01-0.11	Increasing	99.4%
MW057I	PFOS+PFHxS	<0.01-0.01	<0.01-0.01	Stable	45.1%
	PFOA	<0.01	<0.01	-	-

Notes: - Data could not be analysed due to results not exceeding the LOR or not meeting the criteria for analysis.

8.2.12 CPSA DD HS748 Former FTA on Disused Runway

Monitoring well MW049 is located along the central southern base boundary within CPSA DD. Sum of PFOS and PFHxS in April 2022 reported a new minimum concentration with 4.8 µg/L with another relatively low concentration of 15.9 µg/L in October 2022. The well was unable to be located for the April 2023 monitoring round. The historical range between 2018 and 2021 was 20.1 to 46.7 µg/L, refer to **Chart D7** in **Appendix D** and **Table 35**. PFAS results for the monitoring period were variable. PFAS concentrations in groundwater from a down-gradient monitoring well (MW022) reported new minimum concentrations in both March/April (4.2 µg/L) and October/November 2022 (1.6 µg/L), although the April 2023 concentration was within the historical range (9.0 µg/L). As the results during the monitoring period were within the same order of magnitude, there has been no change in the nature of PFAS in groundwater during the monitoring period at CPSA DD and no change to the risk profile presented in the PMAP (Defence, 2020).

Table 35 CPSA DD HS748 Former FTA on Disused Runway

Location ID	Analyte	Historical Range	OMP Events (Current Period)	Mann-Kendall Trend	
		Min – Max (µg/L)	Min – Max (µg/L)	Trend	Confidence Factor
MW049	PFOS+PFHxS	20.1-46.7	4.83-25.9	Decreasing	99.8%
	PFOA	0.60-1.95	0.4-1.07	Decreasing	96.9%

8.2.13 Summary

The temporal evaluation indicates stable or variable PFAS concentrations in groundwater in most on- and off-Base monitoring wells. 20 of the 40 monitoring wells during the monitoring period recorded new maximum sum of PFOS and PFHxS. A notable difference in the 2022 results was the magnitude and range of concentration increases indicating increased variability. Five wells in 2022 reported maximum sum of PFOS and PFHxS concentrations that were more than double the historical maximum concentration. As a comparison, in 2021, none of the concentrations doubled. These five wells included:

- two wells located in the western portion of the Base and screened in the Walloon Coal Measures (MW030 [11.6 µg/L in October/November 2022] and MW041 [0.44 µg/L in April 2022] close to CPSA W and X, respectively).
- two wells located off-Base, screened in Alluvium close to the Warrill Creek (MW054S [0.38 µg/L in October] and MW057S [2.57 µg/L in October/November 2022] down-gradient of CPSA D and E in the southern portion of the Base)
- one well located in the central southern portion of the Base (MW020 [85.9 µg/L in April 2022 and 134 µg/L in April 2023]) close to CPSA Z.

As the sum of PFOS and PFHxS concentration in groundwater from three wells (MW041, MW054S and MW057S) decreased in October/November 2022 and April/May 2023, this indicates variability in these wells. The temporary increases may be influenced by the higher-than-average rainfall in 2022, which may have mobilised PFAS contamination via infiltration or surface water transport along the drainage network and creeks.

PFAS concentrations at MW020 show seasonal changes with post-wet season concentrations increasing, approximately doubling each year since 2020, which suggests increased PFAS mobilisation during the wet season. Due to the presence of the runway, there are no down-gradient wells for 1.5 km and the localised extent of impact is uncertain.

Based on groundwater level data collected during the monitoring period, groundwater in wells located close to creeks has been demonstrated to be in hydraulic connection with surface water which may transport PFAS in surface water to groundwater. As PFAS concentrations in 2022 temporarily increased at MW054S and MW057S, this may indicate migration of PFAS in groundwater laterally to the south and east of Warrill Creek.

The exceedance of the recreational water use guideline value for sum of PFHxS and PFOS in MW057S in October 2022 is considered to be of low significance as the exceedance was temporary and the concentration was below the guideline in the next sampling event in April 2023. In addition, groundwater is unlikely to be used for recreational uses at the location of MW057S.

The extent of PFAS in groundwater down-gradient of monitoring wells MW030, MW054S and MW057S is uncertain as there are no off-Base monitoring wells further west of MW030 or further south and east of MW054S and MW057S, respectively.

Decreasing trends in PFOS and PFHxS groundwater concentrations were identified in seven on-Base wells (MW006, MW007, MW022, MW042, MW046, MW048 and MW049) and no excavation or remediation activities are known to have occurred in these areas. The risk profile across the Management Area remains unchanged to that presented in the PMAP (Defence, 2020).

A review of the risk profile is presented in **Section 9.2**.

8.3 Surface Water and Sediment Results

The surface water drainage consists of 11 main catchments with 24 discharge points located along the Bremer River and Warrill Creek, refer to **Figure 3** and **Figure 5**, **Appendix A**. The table below summarises the CPSAs and discharge points for the different catchments and the sampling locations, at or downstream of the discharge points.

Table 36 Catchment areas and discharge points for CPSA

Catchment Area (refer Figure 3, Appendix A)	Receiving Watercourse	CPSA in Catchment	Discharge Points (DP)	Sampling locations
1	Bremer River	W, A	1-4	SW039, SW052, SW088-SW091
2	Warrill Creek	DD, F	18-20	SW005
3	Bremer River	N, J, M, BB	8-9	SW041
4	Warrill Creek	DD	21	SW005
5	Warrill Creek	B, E	22	SW004
6	Warrill Creek	B, E	23	SW004
7	Warrill Creek	C, D	24	SW008, SW009
8	Bremer River	A, X, Y, S, V	5	SW036, SW047, SW094
9	Bremer River	U, Q	6	SW050
10	Warrill Creek	J, CC, FF	14-17	SW015, SW016, SW018, SW034, SW020
11	Bremer River	-	7	SW051

8.3.1 Bremer River

The Bremer River forms the northern and eastern boundary for the Base. During the monitoring period, PFAS were close to[11] or below the limit of reporting in surface water from sampling locations in catchment 1 downstream of DP1 to DP4 and upstream of DP5 (SW039, WS052, SW088-SW091), refer to **Figure 5** in **Appendix A**.

Downstream of DP5, PFAS has historically been detected at concentrations exceeding the ecological assessment criteria indicating discharge of water from source areas within Catchment 8 as outlined in **Table 36**, above. Historically, PFAS concentrations have decreased with increasing distance downstream from DP5. PFAS were detected at SW047 (located close to DP5) in five sampling events between June 2017 and October 2020, recording between 0.39 and 5.47 µg/L sum of PFOS and PFHxS, however, PFAS were not detected above the limit of reporting during the 2021-2023 monitoring period, refer to **Chart D10** in **Appendix D**. At SW094, which is further downstream, sum of PFOS and PFHxS exceeded the recreational water guideline value for the first-time in April 2022 (2.27 µg/L), however, this appears to be a temporary spike as PFAS were not detected in October 2022 with sum of PFOS and PFHxS at 0.21 µg/L in May 2023. In addition, groundwater is unlikely to be used for recreational use at the location of SW094, and overall, the risk profile is unchanged. The analytical results indicates variability in PFAS concentrations. Further downstream of DP5 (at SW036 and

[11] During the monitoring period, the only detection was 0.03 µg/L sum of PFOS and PFHxS at SW052 in April 2023.

SW050), PFAS concentrations were within the historical range. Overall, the results do not indicate PFAS concentrations are increasing downstream of DP5.

The exceedance of the recreational water use guideline value for sum of PFHxS and PFOS in SW094 in April 2022 is considered to be of low significance as the exceedance was temporary with non-exceedance in the next sampling event in April 2023.

SW051 and SW098 are located downstream of DP6 and DP7. During the monitoring period, PFAS concentrations were lower than the historical maximums at these two locations. New minimum concentrations were recorded in April 2022.

Sampling location SW041 is located along a drain that discharges to Bremer River (DP9) and has historically reported sum of PFOS and PFHxS in the range 4.5 to 48.2 µg/L indicating PFAS is migrating in surface water along this drain, which includes major and moderate CPSAs including M, N and J. A new minimum sum of PFOS and PFHxS (1.78 µg/L) was recorded during the October/November 2022 sampling event. This may indicate dilution due to the large rainfall events during 2022. PFAS concentrations in April 2023 were within the historical range.

Surface water samples from two downstream sampling locations (SW040 and SW045), beyond the confluence of Warrill Creek with Bremer River, were reported within the historical range during the monitoring period.

In summary, sum of PFOS and PFHxS concentrations along the Bremer River have been variable with no correlations identified between individual locations. The variability may relate to the intermittent nature of flow along Bremer River and is affected by seasonal changes due to increased rainfall during the wet season, in particular in February 2022, following which, relatively lower PFAS concentrations were detected. The surface water concentrations in the Bremer River during the monitoring period are generally consistent with historical concentrations and do not indicate increasing PFAS concentrations. Therefore, the data do not indicate changes to the nature and extent of PFAS and the risk profile remains unchanged.

8.3.2 Warrill Creek

Warrill Creek forms the southern and southeastern boundary for the Base. PFAS were not detected in the samples collected along Warrill Creek, upstream of the Base (SW043) indicating there are no upstream PFAS sources in the Warrill Creek catchment.

Sampling locations SW028 and SW008 are located along Frog's Hollow Gully which discharges into Warrill Creek at approximately the location where Warrill Creek forms the southern Base boundary. Frog's Hollow Gully receives surface water from CPSA C (fire training school) and CPSA D (sewage treatment plant). Surface water from both locations reported new minimum sum of PFOS and PFHxS concentrations in 2022, which may reflect dilution effects following high rainfall and localised flooding along Frog's Hollow Gully in 2022.

Sampling locations SW009 and SW004 are located downstream of the confluence of Frog's Hollow Gully with SW004 also downstream of DP22 which receives surface water from Catchment 5. Both SW009 and SW004 recorded new maximum sum of PFOS and PFHxS concentrations in 2022 of 1.8 µg/L (SW009) and 0.14 µg/L (SW004), which suggest increased mobilisation of PFAS in surface water due to discharge. These were temporary spikes with concentrations decreasing to the historical range in subsequent sampling events. Sampling location SW005 is downstream of DP20 and DP21 and recorded a maximum sum of PFOS and PFHxS concentration of 17.6 µg/L in April 2023, which is four times higher than the historical maximum indicating an upstream source of PFAS, possibly from CPSA DD or F, which are located within the catchment (catchment 2 as shown in **Figure 3**, **Appendix A**).

Sampling locations SW015, SW016, SW018, SW020 and SW034 are located along a stretch of Warrill Creek where DP14 to DP17 are located, which discharge in catchment 10. Reported concentrations in surface water from these sampling locations were similar during the monitoring period (sum of PFOS and PFHxS were between <0.01 and 0.50 µg/L) and generally within the historical ranges[12].

[12] Elevated PFAS concentrations (12 µg/L sum of PFOS and PFHxS) was detected in SW034 in June 2017 but all concentrations since this date have been one to two orders of magnitude below this concentration.

Sampling locations SW099, SW100 and SW026 are located upstream to the confluence of Warrill Creek with the Bremer River and downstream of the confluence with the Purga Creek. Sum of PFOS and PFHxS concentrations in these sampling locations were in similar range (<0.02 to 0.58 µg/L) during the monitoring period. New maximums were recorded in all three wells, in October 2022 at SW026 (0.58 µg/L) and SW099 (0.12 µg/L) and at SW100 in April 2023 (0.28 µg/L). The subsequent sampling events at SW026 and SW099 reported relatively lower PFAS concentrations indicating variability in the dataset.

There were no first-time detections of sum of PFOS and PFHxS during the monitoring period with one first-time detection of PFOA at SW026 in October 2022 (0.02 µg/L). **Chart D11** in **Appendix D** shows sum of PFOS and PFHxS concentrations in Warrill Creek are variable with periods of increasing and decreasing concentrations across the catchment. The charts show that most surface water samples along Warrill Creek correlate with each other with concentrations increasing or decreasing at the same time and showing the same degree of variability, with the exception of SW026 and SW005 that show relatively higher variability. This suggests the migration of PFAS along Warrill Creek may be related to temporal effects and surface water flow rates. SW026 is close to the confluence with the Bremer River, which potentially affects PFAS concentrations depending on the predominant flow and possibly localised flooding in this area. Based on the results collected during the monitoring period, the nature and extent of PFAS concentrations in Warrill Creek and the associated risk profile remain unchanged from the PMAP (Defence, 2020).

8.3.3 On-Base catchment areas

PFAS has been detected in all surface water samples collected within drainage channels across the Base, which are downstream of identified CPSAs. The distribution of PFAS in surface water during the monitoring period is generally similar to historical results (CH2M Hill, 2018 and 2020b) except for SW033 and SW027.

SW033 is in the northeastern corner of CPSW W at the rear of a plastic lined holding dam. Concentrations of sum of PFOS and PFHxS increased by an order of magnitude in 2021 (108 and 101 µg/L in March/April and October/November 2021, respectively), with relatively lower concentrations recorded in 2022 (22.4 and 60 µg/L in April and October 2022, respectively). Refer to **Chart D12**, **Appendix D**. SW033 is located within a known PFAS contamination hotspot within an identified PFAS source area. No clear seasonal variations are apparent.

Sampling location SW027 is located close to CPSA Q. Sum of PFOS and PFHxS concentrations in 2022 were variable with both new maximum and minimum concentrations recorded. In March/April 2022, a new maximum concentration was recorded (35.5 µg/L), which was an order of magnitude increase compared to historical results. In October/November 2022, a new minimum concentration was recorded (0.24 µg/L). CPSA Q has a large proportion of hard surfaces and therefore drains in this area readily respond to rainfall. There is a limited dataset (four rounds of data) for this location due to the short-lived nature of surface water flows and small catchment area for this drain. As SW027 is located at the top section of the drain, there is limited flow into this section and the surface water is not likely to be diluted by inflows from other parts of the catchments.

PFAS concentrations in surface water samples from the other on-Base drains during the monitoring period were within the historical range. The range in sum of PFOS and PFHxS concentrations for 2022 (<0.01 to 60 µg/L) and April/May 2023 (<0.02 to 45.9 µg/L) were similar to the 2017 to 2020 range (<0.01 to 63.4 µg/L), refer to **Chart D12**, **Appendix D**.

There were no new exceedances or first-time detections of sum of PFOS and PFHxS and PFOA in drain samples during the sampling events (other than the detections/exceedances in a sample (SW304) that was collected from DP14 for the first-time in April 2023). Based on these results, the risk profile remains unchanged.

8.3.4 Off-Base upstream catchment areas

SW025 is a sampling point indicative of background conditions upstream of the Base along Bremer River. Since 2019, when a possible false positive was reported at the detection limit, PFAS have not been detected at this sampling location indicating there are no upstream off-Base sources of PFAS impacting Bremer River.

8.3.5 Sediment

The highest sum of PFOS and PFHxS concentrations recorded in samples collected from the on-Base drains during the monitoring period were from SD079 (1.94 mg/kg) and SD056 (1.93 mg/kg), which are located downstream of known source areas on-Base, CPSA M / N and CPSA U, respectively, refer to **Figure 2**, **Appendix A**). Both concentrations were new maximum concentrations for the sample locations. Sum of PFOS and PFHxS were detected in all drain samples with 14 of the 22 samples reporting new maximum concentrations during the monitoring period. PFOA was detected in most sediment samples and new maximum concentrations were reported in seven sampling locations. The increase in PFAS concentrations at multiple drain locations may be associated with the higher rainfall totals during 2022, which may have increased the transportation of impacted sediment from source areas.

The sediment sample from SD059, located downstream of CPSA A showed variability with sum of PFOS and PFHxS at <0.0002 mg/kg in March/April 2022, with the sample collected in October/November 2022 reporting a new maximum of 1.10 mg/kg.

Sediment quality data for on-Base drains was reported in the Defence database during a sampling event conducted as part of the PMAP Delivery project in August 2021. Analytical results for sediment samples collected from drains close to the discharge points to Warrill Creek (DP18-24, refer to **Figure 5**, **Appendix A**) indicated sample SD525, from DP18, adjacent to CPSA DD had 3.15 mg/kg sum of PFHxS and PFOS. This is one of the highest concentrations recorded for sediment samples in the dataset. Sum of PFHxS and PFOS concentrations in the other samples were in the range 0.009 to 0.26 mg/kg. This indicates PFAS is migrating in sediment along the discharge points to Warrill Creek. This could be due to the transport of sediment along the drains or, alternatively, due to high PFAS concentrations in surface water sorbing onto sediment. As discussed in **Section 6.1**, ongoing PMAP Delivery activities include a mass flux study to understand transport pathways.

PFAS were detected in all downstream sampling locations along Bremer River and Warrill Creek in 2022 with 10 of the 27 sediment sampling locations (SD004, SD009, SD020, SD036, SD039, SD045, SD051, SD052, SD090, SD091) recording new maximum concentrations of either sum of PFOS and PFHxS or PFOA. The magnitude of the increases in concentration was relatively minor (i.e., increase of sum of PFOS and PFHxS from 0.04 to 0.06 mg/kg).

The maximum sum of PFOS and PFHxS concentrations in sediment from Bremer River was at SD051 (0.0397 mg/kg) adjacent to the central eastern portion of the Base, downstream of DP6, which is itself downstream of the discharge of several major source areas including CPSA A. The maximum sum of PFOS and PFHxS sediment concentration reported along Warrill Creek during the monitoring period, was at SD005 (0.353 mg/kg) located adjacent to the southern boundary, downstream of Frog's Hollow Gully and CPSA D (sewage treatment plant) at DP24.

PFOA was rarely detected above the LOR in sediment from along the creeks, with a maximum concentration of 0.0008 mg/kg detected at SD016.

Sum of PFHxS and PFOS were detected in the upstream sampling locations SD025 (Bremer River) in April 2023 for the first-time, however, the concentration was only slightly above the detection limit and may be a false positive. PFAS were not detected in sediment at sampling location SD043 (Warrill Creek), which is consistent with historical results.

9.0 Discussion

9.1 Conceptual Site Model

The CSM was developed during the DSI (CH2M Hill, 2018) and summarises the linkages between sources, exposure pathways and receptors.

The OMP has provided additional data to further understand the changing conditions and extent of PFAS in groundwater, surface water and sediment at the Base. Key observations include:

- Mann-Kendall trend analysis of groundwater monitoring data from different locations indicated variable trends, including stable, decreasing or increasing trends. New maximum concentrations and new detections were reported at selected locations and the changes are inferred to be potentially associated with increased rainfall during the monitoring period. In particular, variability in PFAS groundwater concentrations were observed along the central western boundary at the fire training school (MW030), at CPSA Z (Fuel UST with AFFF listing) (MW020) and in wells adjacent to the Warrill Creek (MW054S and MW057S), where new maximum concentrations were recorded during the monitoring period.
- New maximum PFAS concentrations in sediment at some of the sampling locations along the drains, with new maximum concentrations recorded in approximately two-thirds of sampling locations. This is possibly related to higher-than usual surface water flows, due to the high rainfall conditions in 2022, mobilising sediment from known source areas along drainage lines, creeks and rivers.
- Despite new maximums and new detections, the inferred PFAS transport mechanisms and the groundwater, surface water and sediment concentrations are generally similar to those reported in CH2M Hill (2018) and AECOM (2021a).
- Other groundwater and surface water / sediment sampling locations along Bremer River, Warrill Creek and drains have shown generally stable concentrations during the monitoring period. The PFAS transport mechanism and the general extent are similar to that reported in the DSI, (CH2M Hill, 2018) and 2020 AIR (AECOM, 2021a). Although some monitoring wells have been lost close to some source areas in the central portion of the Base, PFAS concentrations in groundwater in down-gradient monitoring wells and surface water in Bremer River and Warrill Creek have generally indicated steady concentrations.

During the monitoring period, no PFAS remediation or management activities have taken place. Following a review of the CSM, interpretation of the data collected during the monitoring period does not affect the understanding of the CSM and no changes to the PFAS primary and secondary sources, pathways and receptors have been identified. Future monitoring will continue to contribute to an evaluation of potential changes to the CSM understanding.

9.2 Risk Profile

The potentially elevated risks identified in the PMAP (Defence, 2020) are listed in **Table 37**. Based on the data collected during OMP monitoring between March 2021 and May 2023, the risk profile to human health receptors within the Management Area remains unchanged since the publication of the HHRA (EnRisks, 2019).

Table 37 Potentially elevated risks identified in the PMAP (Defence, 2020)

ID	Risk	Description in the PMAP	Nature of risk	Relevant Risk Group	Risk Timescale
1	Incidental direct contact with PFAS in soil and sediment	Soils within CPSA A and N contain elevated concentrations of PFAS which presents a risk to Base personnel and contractors who are involved in regular soil disturbance activities.	Human health	Risk Group 1 – CPSA A and N, located within the RAAF Base Amberley Management Area	Current
2	Human consumption of fish caught from local waterways	PFAS has historically been detected in fish and crustaceans collected from Warrill Creek and Bremer River. Current Queensland Health advice is not to consume fish caught in the Investigation Area due to presence of PFAS.	Human health	Risk Group 3 – Warrill Creek Risk Group 5 – Bremer River	Current. Queensland Government has precautionary advice in place
3	Consumption of eggs by children	PFAS has been detected in soils on private properties and in water that has historically been used for irrigation. This exposure risk applies to properties where chickens have regular access to PFAS in soil or where water containing PFAS is used for irrigation.	Human health	Risk Group 4 – Properties adjacent to Warrill Creek	Current
4	Consumption of home-slaughtered beef meat	PFAS has been detected in soils on private properties and in water that has historically been used for irrigation. This exposure risk applies to properties where cattle have regular access to PFAS in soil / sediment / pasture, or where water containing PFAS is used for irrigation.	Human health	Risk Group 4 – Properties adjacent to Warrill Creek	Current
5	Consumption of home-slaughtered beef offal (liver and / or kidney)	PFAS has been detected in soils on private properties and in water that has historically been used for irrigation. This exposure risk applies to properties where cattle have regular access to PFAS in soil / sediment / pasture, or where water containing PFAS is used for irrigation.	Human health	Risk Group 4 – Properties adjacent to Warrill Creek	Current
6	Multiple exposure pathways	Multiple exposure pathways that relate to the cumulative risks associated with the consumption of fish, eggs and beef products as identified in Risk ID 3 - 6 above and the incidental direct contact with water and swimming in the Bremer River and Warrill Creek.	Human health	Risk Group 3 – Warrill Creek Risk Group 4 – Properties adjacent to Warrill Creek Risk Group 5 – Bremer River Risk Group 6 – Properties adjacent to Bremer River	Current
7	Direct toxicity to terrestrial ecosystems	Concentrations of PFOS in soils, sediments and some grass samples on-Base exceeded investigation criteria for ecological direct exposure	Ecological risk	Risk Group 2 – CPSA A, C, G, W, X, DD, located within	Current

ID	Risk	Description in the PMAP	Nature of risk	Relevant Risk Group	Risk Timescale
		(HEPA, 2018). As such, adverse effects on ecological receptors cannot be excluded.		RAAF Base Amberley Management Area	
8	Bioaccumulation and effects on higher order consumers within terrestrial ecosystems	Concentrations of PFOS in soils, sediments and some grass samples on- and off-Base exceeded investigation criteria for ecological direct exposure (95% species protection) (HEPA, 2020). As such, adverse effects on ecological receptors cannot be excluded.	Ecological risk	Risk Group 2 – CPSA A, C, G, W, X, DD, located within RAAF Base Amberley Management Area	Current
9	Direct toxicity to aquatic ecosystems	Concentrations of PFOS in surface water exceeded investigation criteria for ecological direct exposure (HEPA, 2020) during the monitoring period. As such, adverse effects on ecological receptors cannot be excluded.	Ecological risk	Risk Group 3 – Warrill Creek Risk Group 5 – Bremer River	Current
10	Bioaccumulation and effects on higher order consumers within aquatic ecosystems	Concentrations of PFOS in surface water exceeded investigation criteria for ecological direct exposure (HEPA, 2020) during the monitoring period. As such, adverse effects on ecological receptors cannot be excluded.	Ecological risk	Risk Group 3 – Warrill Creek Risk Group 5 – Bremer River	Current

The following aspects were considered in assessment of the risk profile:

Groundwater

The extent of PFAS in groundwater is generally similar to the historical dataset. The dataset indicates broadly steady or variable PFAS concentrations at, or down-gradient, of most source areas. New maximum PFAS concentration in groundwater were detected at three boundary locations during the monitoring period as follows:

- Monitoring well MW030, screened in the Walloon Coal Measures, located along the western Base boundary close to CPSA W (Fire Fighting Training School). The sum of PFOS and PFHxS concentration at MW030 increased from 3.4 µg/L in 2021 to 12.9 µg/L in April 2023. The groundwater flow direction in the Walloon Coal Measures in this portion of the Management Area is uncertain as there are no monitoring wells further west. The potential for migration of PFAS in groundwater towards the west/northwest is uncertain. Although these are identified as data gaps, revision of the OMP will consider additional monitoring required to address the data gaps.
- Monitoring well MW057S, screened in the Alluvium, adjacent to Warrill Creek. The sum of PFOS and PFHxS concentration at MW057S was 2.6 µg/L in October/November 2022 (exceedance of recreational water guideline value) compared to the previous maximum concentration of 0.1 µg/L in 2021. The increase was temporary, as a lower concentration 1.3 µg/L was reported in the sample collected in April 2023 and was below the recreational water guideline value. As there are no monitoring wells further down-gradient (i.e., to the east), the extent of PFAS in the Alluvium aquifer in the southeastern portion of the Management Area is uncertain. It is likely that the temporary increase was a seasonal effect due to higher rainfall in 2022 and surface water and groundwater interaction. PFAS were not detected in the deeper well at this location, MW057I, screened in the Tertiary Formation. Revision of the OMP will consider additional monitoring required to address the data gaps.
- Monitoring well MW054S, screened in the Alluvium, adjacent to Warrill Creek. The sum of PFOS and PFHxS concentration at MW057S was 0.38 µg/L in November 2022 and 0.35 µg/L in April 2023 compared to the previous maximum concentration of 0.14 µg/L in 2020/21. As there are no wells further south, the extent of PFAS in the Alluvium aquifer in the southern portion of the Management Area is uncertain. It is likely that the temporary increase was a seasonal effect due to higher rainfall in 2022 and surface water and groundwater interaction. PFAS were not detected in the deeper well at this location, MW054D, screened in the Walloon Coal Measures. Revision of the OMP will consider additional monitoring required to address the data gaps.

Additionally, the dataset has indicated variable PFAS concentrations in monitoring well MW020, located down-gradient of CPSA Z (fuel UST with AFFF). Concentrations increase in post-wet season monitoring events with PFAS concentrations doubling each year since 2020.

Surface Water and Sediment

- PFAS concentrations in surface water along Bremer River, Warrill Creek and drains have shown stable or variable concentrations during the monitoring period and were generally similar to historical results. One new exceedance of the recreational water guideline value was recorded in 2022 at SW094, along Bremer River in March/April 2022, however, PFAS were not detected at this location in October 2022.
- PFAS concentrations in most sediment samples from creeks during the monitoring period showed similar concentrations to historical results. New maximum concentrations were recorded in 14 sampling locations along on-Base drains, in particular following the high rainfall event in 2022, which suggests increased transport of impacted sediment in surface water flows. Guideline values have not been established for PFAS in sediment.
- Precautionary advice issued by the Queensland Government for the consumption of fish caught from Warrill Creek and Bremer River adjacent to the Base remains in place.

Following a review of the data collected during the monitoring period, some uncertainties have been identified regarding the lateral extent of PFAS in groundwater down-gradient of source areas and at boundary locations. Although no changes have been identified to the understanding of risks associated with the nature and extent of PFAS in the RAAF Base Amberley Management Area, additional data

would need to be collected to address the uncertainties to verify that the CSM and conclusions made in the DSI (CH2M Hill, 2018) still apply and the known human health and ecological risk profile of the Management Area is unchanged. Additional refinement of the monitoring network would improve the understanding of the extent of PFAS, as discussed in **Section 9.3**.

9.3 Assessment of Current OMP

Following a review of the data collected during the current monitoring period, there are three boundary locations at the RAAF Base Amberley Management Area where new maximum concentrations have been observed and increasing trends identified during the monitoring period and the spatial distribution of PFAS is uncertain. If the PFAS concentrations detected are verified during October 2023 and April 2024 sampling events, additional monitoring wells may be required to delineate the extent of PFAS in groundwater within the Management Area.

Due to the loss of some of the on-Base groundwater monitoring wells, there is limited information on groundwater quality down-gradient of three of the main source areas (CPSA A former topside aviation fire training area and current fire training area pad CPSA M fuel farm 1 and triple interceptor pit and CPSA Y, a former secondary FTA). There is also a data gap for PFAS concentrations in groundwater down-gradient of three boundary locations.

The monitoring network could be refined (including replacement of lost wells and new wells at down-gradient locations) to target the program on key areas of the Management Area. Due to the non-detection or low concentration of PFAS detected in some of the surface water and sediment sampling locations, it is considered that there is scope to refine the monitoring network to target locations that consistently report PFAS detections and reduce the frequency of sediment sampling.

The uncertainties identified above triggers the requirement to complete a review of the OMP.

10.0 Conclusions

Groundwater, surface water and sediment sampling was completed in general accordance with the SAQP (AECOM, 2023b) and to meet the objectives of the OMP (Defence, 2020) between March 2021 and May 2023.

- During the monitoring period, the concentrations of PFAS in groundwater at most groundwater sampling locations, were similar to previous results. During the monitoring period, the highest PFAS groundwater concentrations were detected at monitoring wells located down-gradient of previously identified primary PFAS source areas. The inferred extent of PFAS in groundwater is generally similar to that which was presented in the DSI (CH2M Hill, 2018), 2019 seasonal monitoring event reports (CH2M Hill, 2020a, b), 2020 AIR (AECOM, 2021b), however some uncertainties have been identified based on the dataset. These are as follows:
    - The extent of PFAS in groundwater to the west of MW030 at CPSA W along the western Base boundary.
    - The extent of PFAS in groundwater beyond Warrill Creek to the southeast of MW057S and south of MW054S.
    - The extent of PFAS in groundwater between the key Base source area (CPSA A) and boundary monitoring wells (such as MW034). This is due to the loss of down-gradient monitoring wells (MW008, MW039, MW040).
    - The extent of PFAS in groundwater close to CPSA M. This is due to the loss of monitoring well MW056.
    - The extent of PFAS in groundwater close to CPSA Y. This is due to the loss of monitoring well MW015.
    - Analysis of temporal trend data indicates some groundwater monitoring locations have seasonal changes. For example, groundwater samples collected from MW020, screened in the Tertiary Formation between 16.5 and 23.5 mbgl have shown higher PFAS concentrations during the post-wet season sampling events with concentrations doubling each year since 2020. Shallow monitoring wells located near creeks such as MW054S and MW057S had increases in PFAS concentrations following the high rainfall events in 2022 and the increases may be related to surface water and groundwater interactions with PFAS migrating with surface water being lost to groundwater.

  Revision of the OMP will consider additional monitoring required to address the data gaps.
- PFAS concentrations at surface water sampling locations were generally similar to historical results. Concentrations of PFAS in surface water vary between locations and over time. Temporal charts generally do not indicate any trends for PFAS concentrations (i.e., no clear linkage between the season of monitoring and increasing or decreasing PFAS concentrations). Changes in PFAS concentrations appear to be more directed to surface water and groundwater flow rates rather than seasonality. For sediment, the concentration ranges for PFOS and PFHxS have remained relatively consistent with historical data for creek locations. The detection of new maximum PFOS and PFHxS concentrations in two-thirds of sediment samples in drains during the monitoring period may relate to the increased flow rates associated with heavy rainfall transporting more impacted sediment along the drains.
- The CSM was reviewed, and based on the results presented within this report, no changes were identified to source, pathway or receptors at the Management Area. Due to the loss of on-Base wells and concentration increases in groundwater at some boundary locations there are some uncertainties regarding the lateral extent of PFAS.
- Although no changes have been identified to the understanding of risks associated with the nature and extent of PFAS in the RAAF Base Amberley Management Area, additional data would need to be collected to address the uncertainties and meet the objectives of the SAQP and OMP. Revision of the OMP will consider additional monitoring required to address the data gaps. Ongoing monitoring in accordance with the OMP is required to facilitate the decision-making process.
- No updates to the PMAP are proposed based on no changes to the CSM and risk profile.

11.0 References

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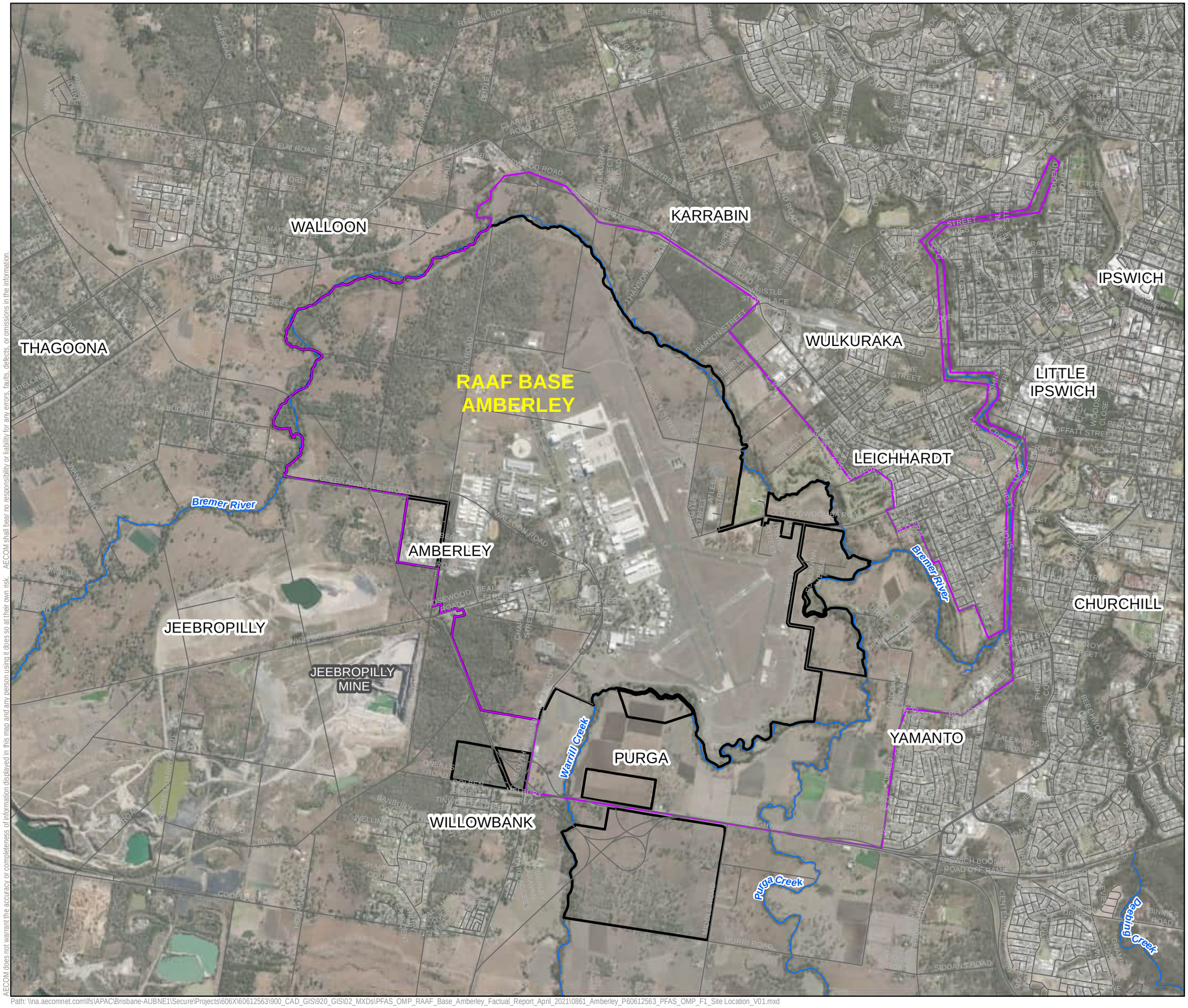
Appendix A

Figures

Appendix A Figures



LEGEND

- Management Area
- Base Boundary
- Watercourses

km
0 0.5 1

AECOM

SCALE 1:38,000
SIZE A3
SHEET -
COORDINATE SYSTEM GDA 1994 MGA Zone 56

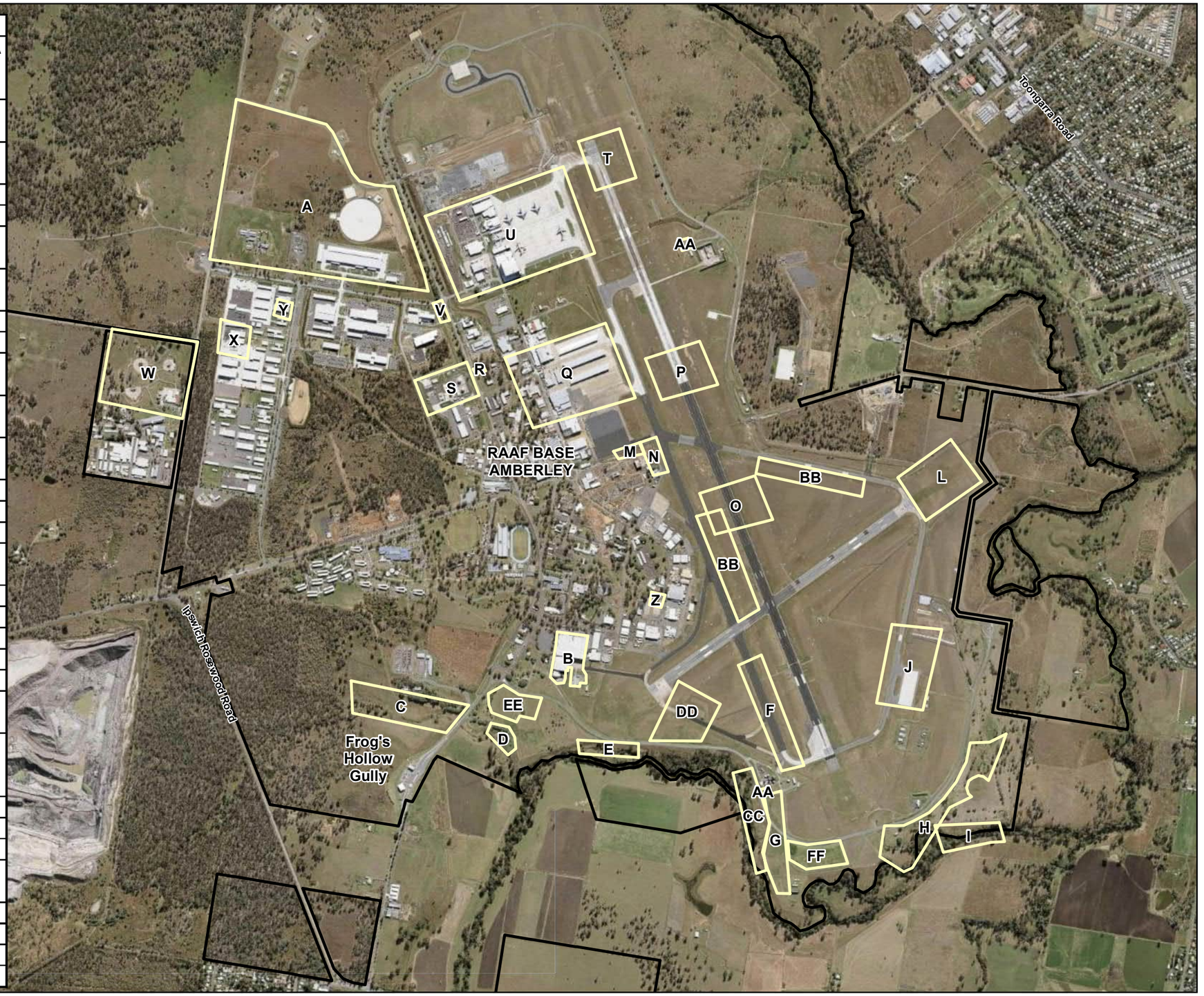
TITLE
Figure 1: RAAF BASE AMBERLEY LOCATION

PROJECT
PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT
DEPARTMENT OF DEFENCE

Path: \\na.aecomnet.com\lfs\APAC\Brisbane-AUBNE1\Secure\Projects\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\PFAS_OMP_RAAF_Base_Amberley_Factual_Report_April_2021\0861_Amberley_P60612563_PFAS_OMP_F1_Site Location_V01.mxd

CPSA	Description
A	Former Top Side Aviation Fire Training Area and current FTA Pad (CSR_QLD_000473), including military Dog Working Facility
B	Boeing Hangar (Building 410) and Former Landfill (CSR_QLD_000128)
C	Frogs Hollow Former Fire Training School location (CSR_QLD_000474)
D	Sewage Treatment Plant (CSR_QLD_000461)
E	Historic Containment Pond (CSR_QLD_000480)
F	Southern Runway FTA and Operations Testing Area (inc. adjacent grassed areas)
G	Former FTA and Operations Testing Area (CSR_QLD_000121)
H	Former FTA and Landfill (CSR_QLD_459)
I	Former FTA and Landfill (CSR_QLD_460)
J	Former FTA and Operations Testing Area and current location of Bomb Replenishment Apron
L	Former Fire Training and Operations Testing Area (CSR_QLD_478)
M	Former Fuel Farm 1 (CSR_QLD_000465) and Triple Interceptor Pit (CSR_QLD_000484)
N	Fire Station
O	F1- 11 2006 Incident
P	1978 Skyhawk Incident
Q	1 Squadron Hangar (CSR_QLD_000144) and 6 Squadron Hangar
R	K Store (CSR_QLD_000148)
S	AFFF Store, Washdown at Fuel Farm 2,2A (CSR_QLD_000468)
T	Aircraft F-4E Incident (CSR_QLD_472)
U	38 Squadron Hangar
V	AFFF Wastewater Holding Tank (CSR_QLD_000476)
W	Fire Fighting Training School (CSR_QLD_000464), inc. AFFF ponds and tanks, and AFFF pads
X	Former Structural and Open Pit FTA, currently occupied by 21 CONST SQN, incl. potential runoff area to the south and east
Y	Former Secondary Fire Training Area (CSR_QLD_000479)
Z	Fuel UST, with AFFF listing (CSR_QLD_485)
AA	Triple Interceptor pits at Engine Test Cell facilities 1 and 2
BB	Areas used for irrigation - former grass runways (CSR_QLD_000486 and CSR_QLD_000477)
CC	Former Landfill (CSR_QLD_000466)
DD	HS748 Former FTA on Disused Runway
EE	Former Sports Oval
FF	Buried PFAS impacted stockpile



AECOM

www.aecom.com

N

GDA 1994, MGA 56

0 200 400 800

metres

1:20,000 (when printed at A3)

LEGEND

- Confirmed Primary Source Area
- RAAF Base Amberley

PROJECT: PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY2023

CONFIRMED POTENTIAL SOURCE AREA LOCATIONS

Project ID: 60612563
CREATED BY: Joel.Bryant
LAST MODIFIED: 19-Jan-2021
REVISION: B

Figure 2

A3 size

P:\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\20210118_Amberley_JamesPeachey\QLD_0861_Amberley_STG2_F2_PotentialSourceLocations.mxd Date Saved: 19/01/2021 User Name: Joel.Bryant

N

0 250 500 750 1,000
Metres

Legend

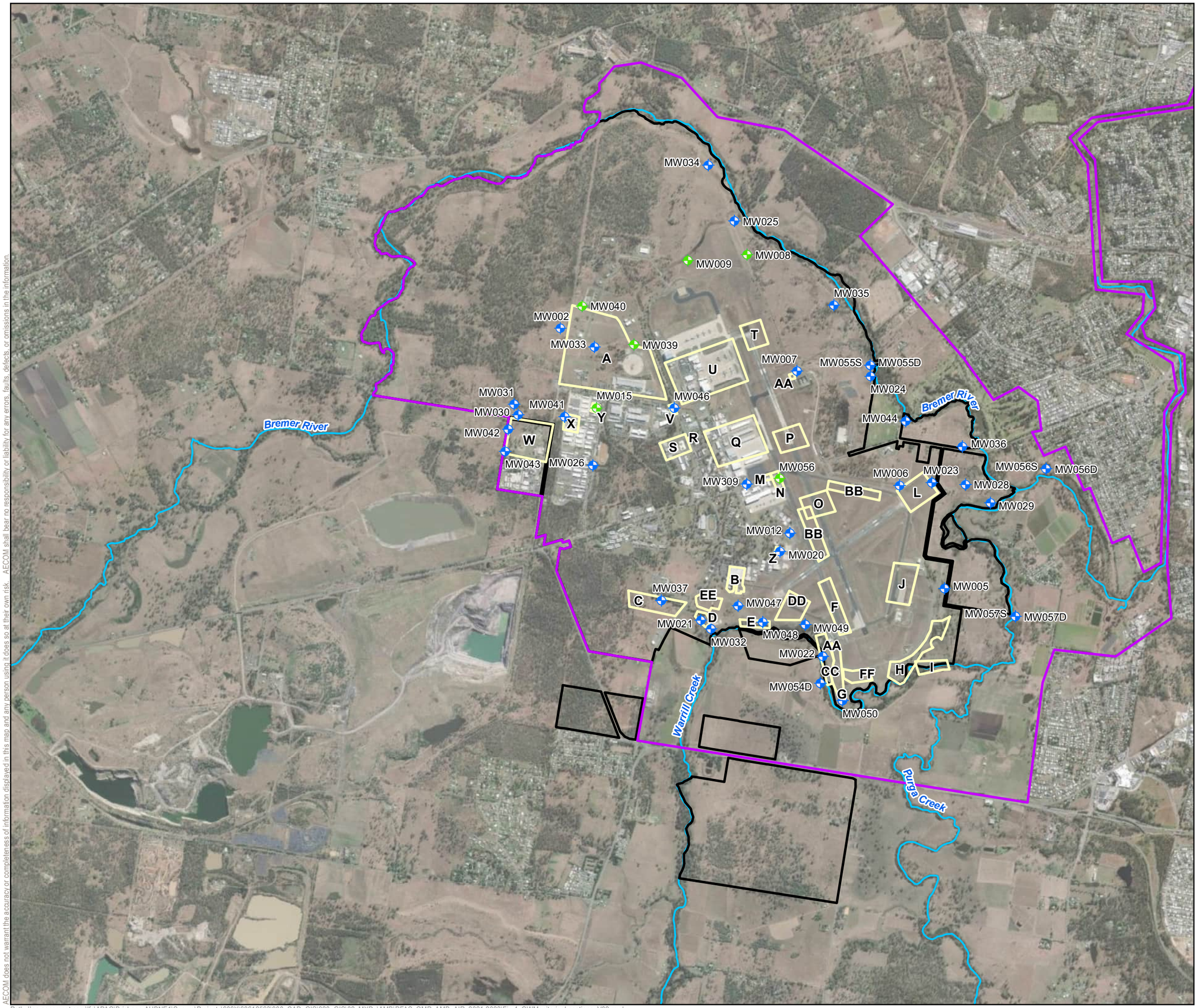
Discharge Location
- Major
- Minor

- Investigation Area
- Potential Source Area
- Facility Boundary

Catchment
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

Notes:
1. Imagery sourced from DNRME (2018)
3. Catchment data based on RAAF Base Amberley Base Engineering Assessment Program Stage 2 (Aurecon, 2012).
4. Discharge points and type of drain present based on Defence NSIMS Data 2018.
5. Figure sourced from the DSI (CH2M Hill, 2019)

Figure 3: RAAF BASE AMBERLEY CATCHMENTS
PROJECT: PFAS OMP RAAF BASE AMBERLEY INTERPRETIVE REPORT MARCH 2021 TO MAY 2023



LEGEND

- Groundwater Monitoring Well
- Destroyed Groundwater Monitoring Well
- RAAF Base Amberley (0861) Boundary
- Management Area
- Confirmed Potential Source Area
- Watercourses

N

0 0.5 1 km

AECOM

SCALE 1:35,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 4: Groundwater Monitoring Wells

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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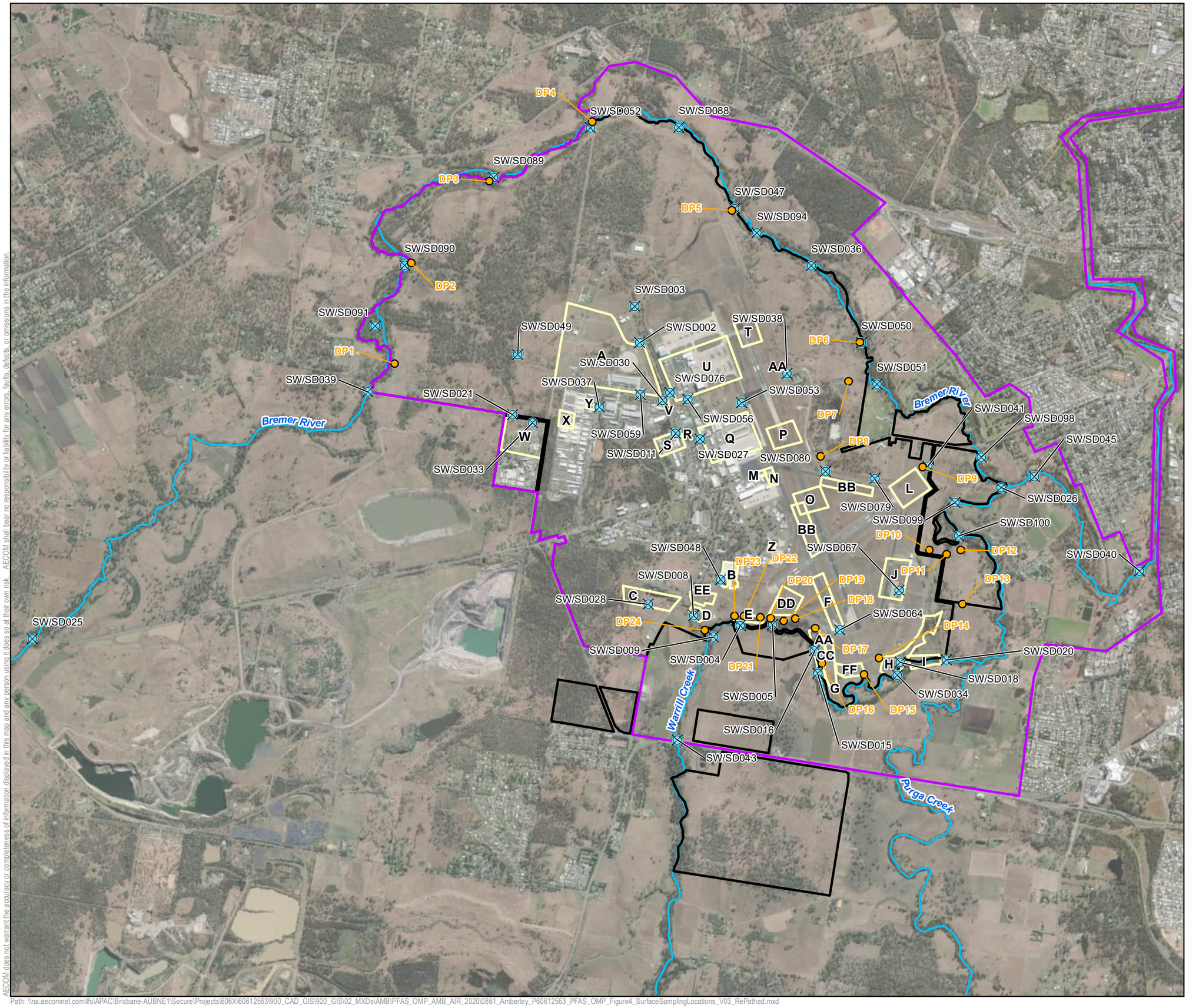

LEGEND

- Surface Water / Sediment Sample
- Discharge locations
- Confirmed Potential Source Area
- RAAF Base Management Area (0861)
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 5: Surface Water and Sediment Sampling Locations

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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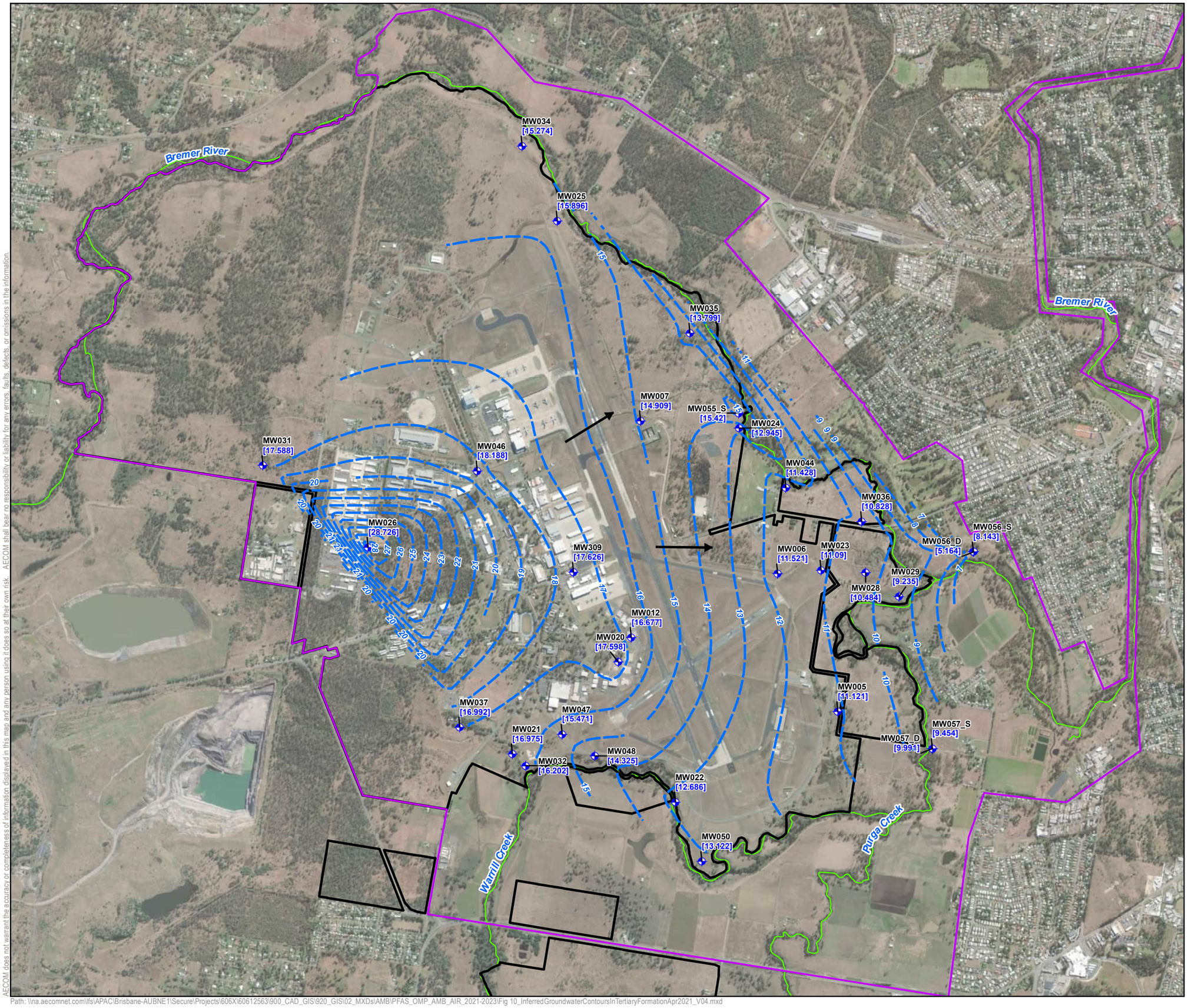

LEGEND

- Groundwater Elevation (mAHD)
- Inferred Groundwater Contours (mAHD)
- Inferred Groundwater Flow Direction
- Watercourses
- Management Area
- Bae Boundary

AECOM

-

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 6: Inferred Groundwater Contours in the Alluvium/Tertiary Formation: April 2021

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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LEGEND

- Groundwater Monitoring Well with Groundwater Elevation (mAHD)
- Inferred Groundwater Contours (mAHD)
- Inferred Groundwater Flow Direction
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

N

0 0.5 1 km

AECOM

SCALE 1:35,000

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SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 7: Inferred Groundwater Contours in Walloon Coal Measures (April 2021)

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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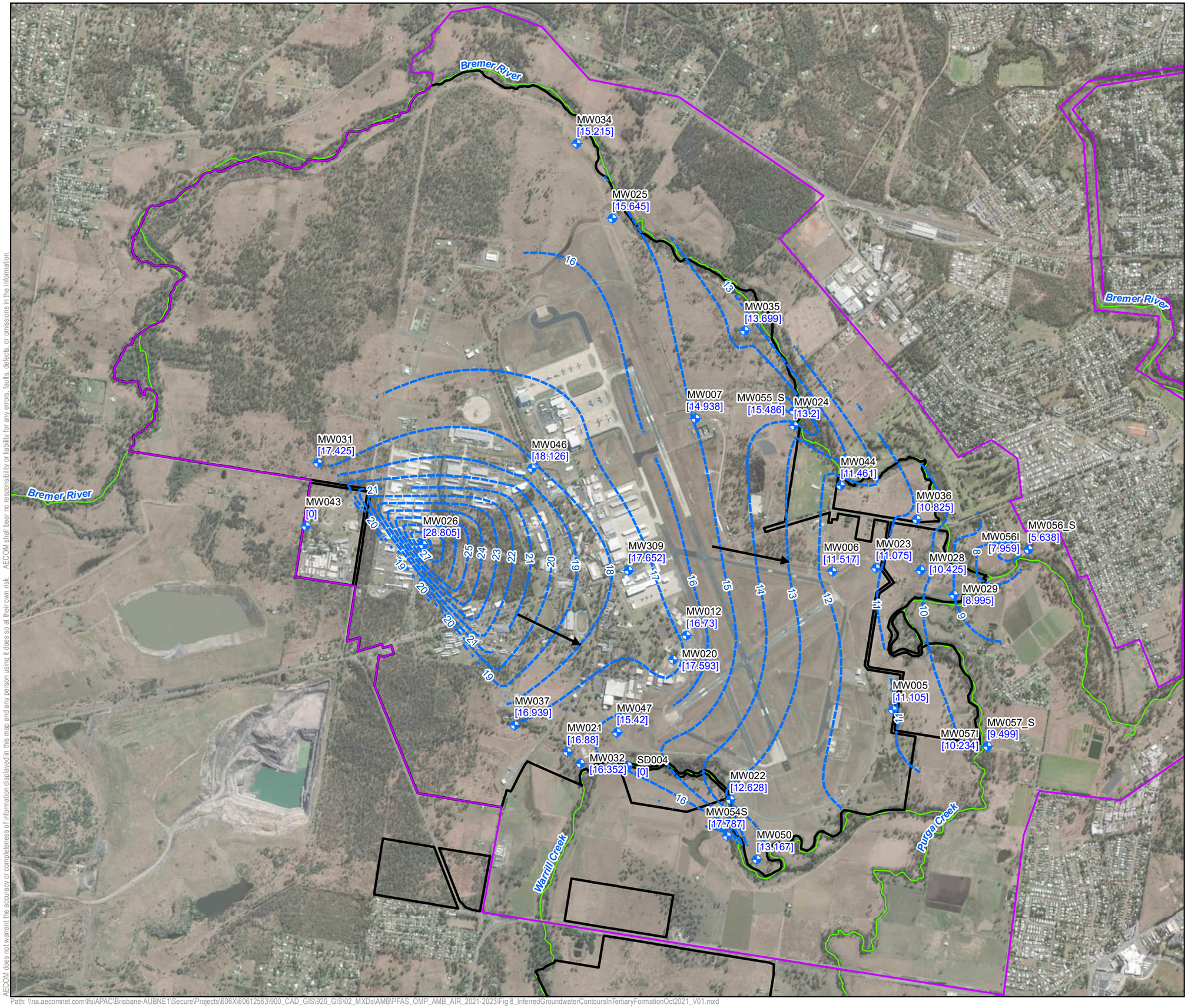

LEGEND

- Groundwater Elevation (mAHD)
- Inferred Groundwater Contours (mAHD)
- Inferred Groundwater Flow Direction
- Watercourses
- Management Area
- Base Boundary

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 8: Inferred Groundwater Contours in the Alluvium/Tertiary Formation:
- October 2021

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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LEGEND

- Groundwater Monitoring Well with Groundwater Elevation (mAHD)
- Inferred Groundwater Contours (mAHD)
- Inferred Groundwater Flow Direction
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

0 0.5 1 km

AECOM

SCALE 1:35,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 9: Inferred Groundwater Contours in Walloon Coal Measures (October 2021)

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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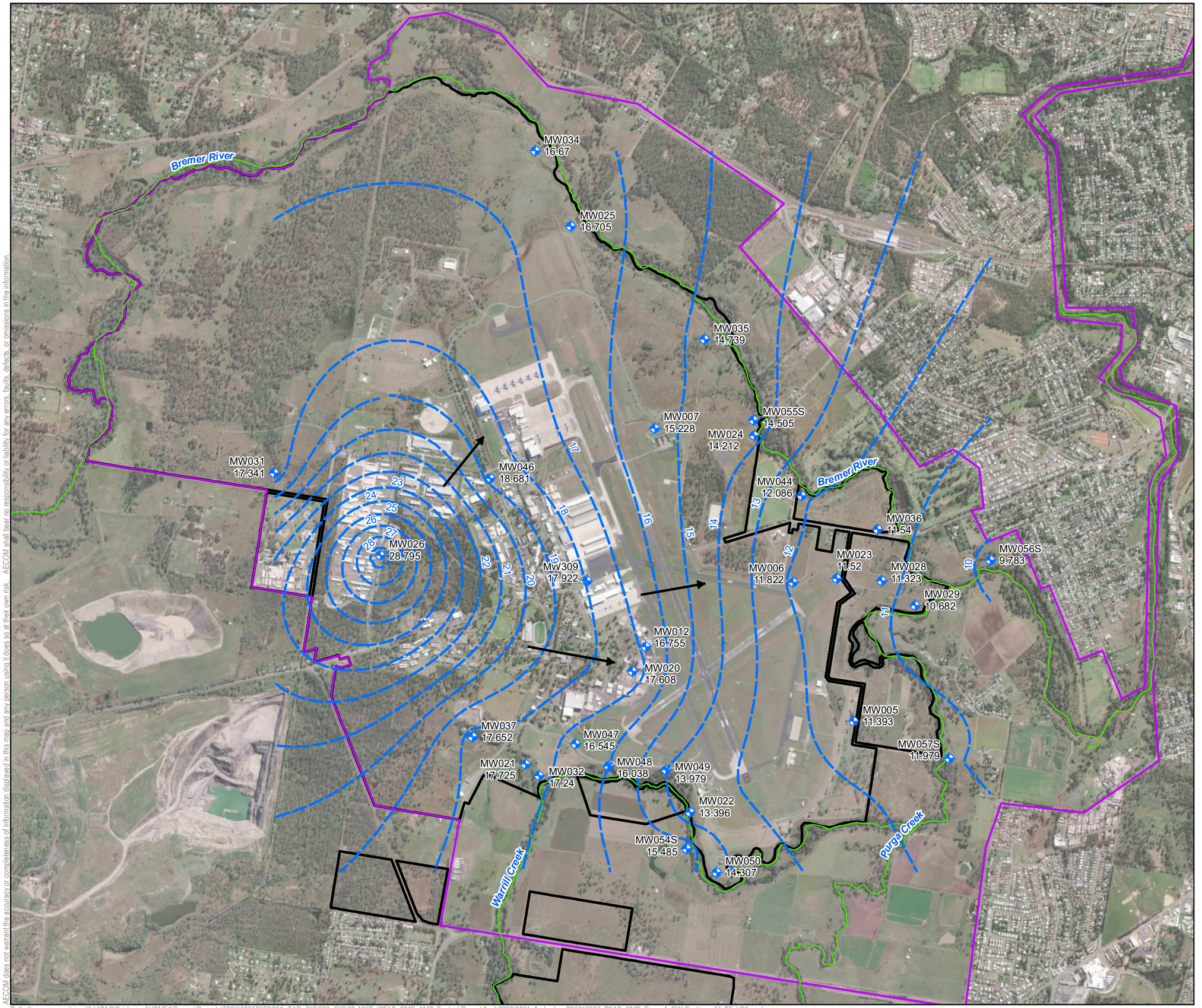

LEGEND

- Groundwater Monitoring Wells
- Management Area
- Base Boundary
- Groundwater contours (mAHD)
- Groundwater flow direction

N

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 10: Inferred Groundwater Contours in the Alluvium / Tertiary Formation March / April 2022

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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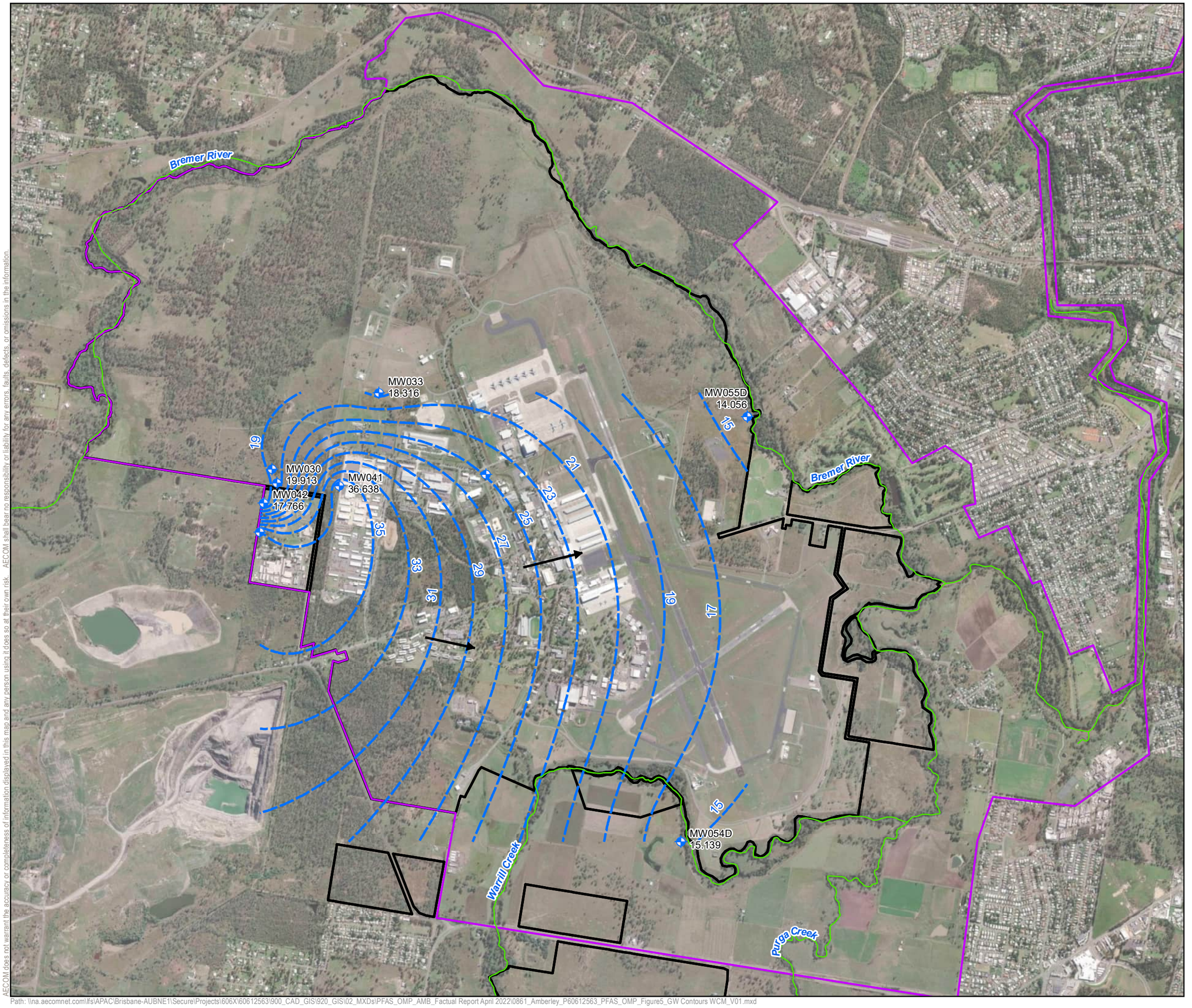

LEGEND

- Groundwater Monitoring Well
- Management Area
- Base Boundary
- Groundwater contour (mAHD)
- Groundwater flow direction

N

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 11: Inferred Groundwater Contours in the Walloon Coal Measures March / April 2022

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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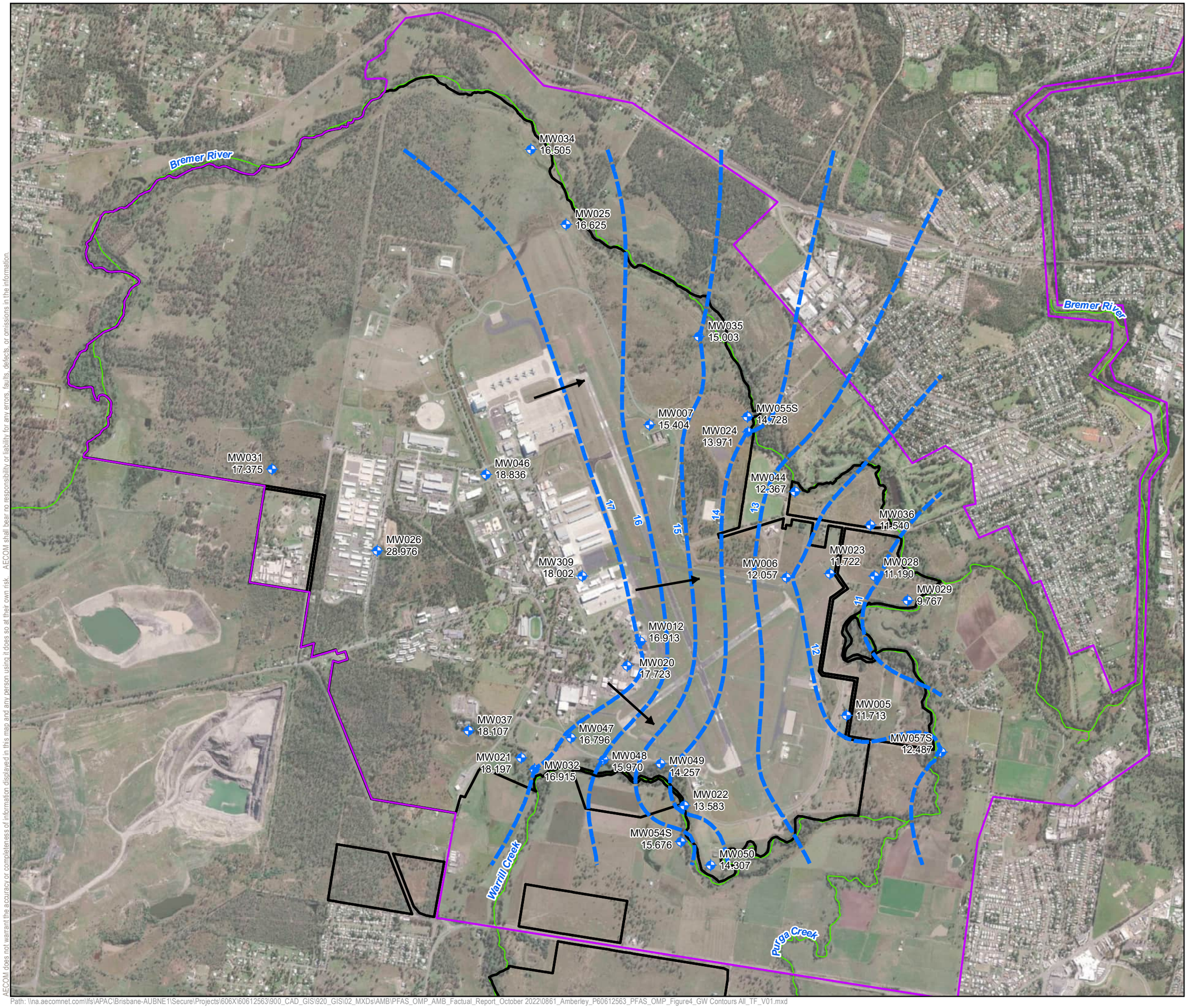

LEGEND

- Groundwater Monitoring Wells
- Management Area
- Base Boundary
- Groundwater Contours (mAHD)
- Groundwater flow direction

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 12: Inferred Groundwater Contours in the Alluvium / Tertiary Formation October / November 2022

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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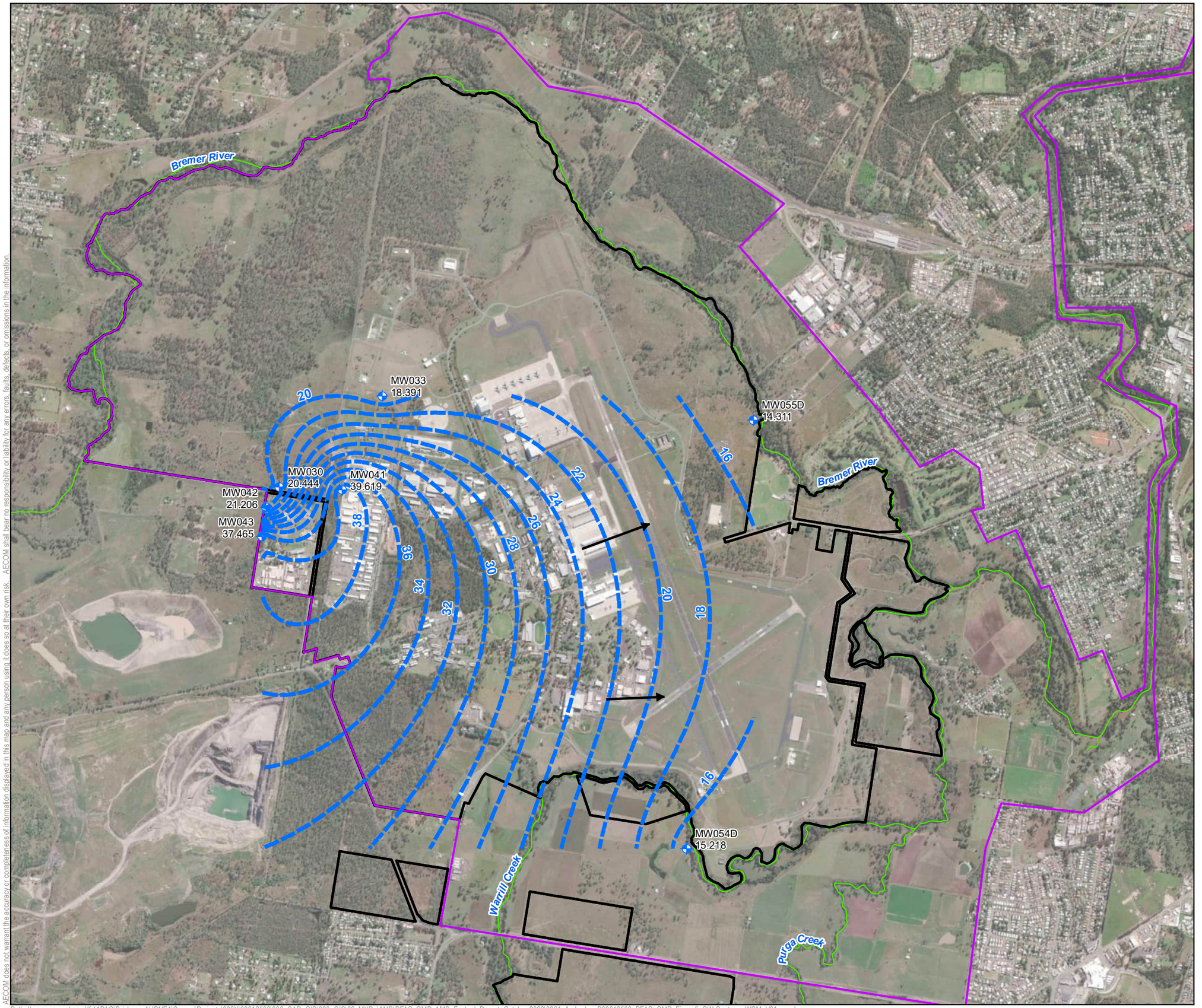

LEGEND

- Management Area
- Base Boundary
- Groundwater Contours (mAHD)
- Groundwater flow direction

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET -

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 13: Inferred Groundwater Contours in the Walloon Coal Measures October / November 2022

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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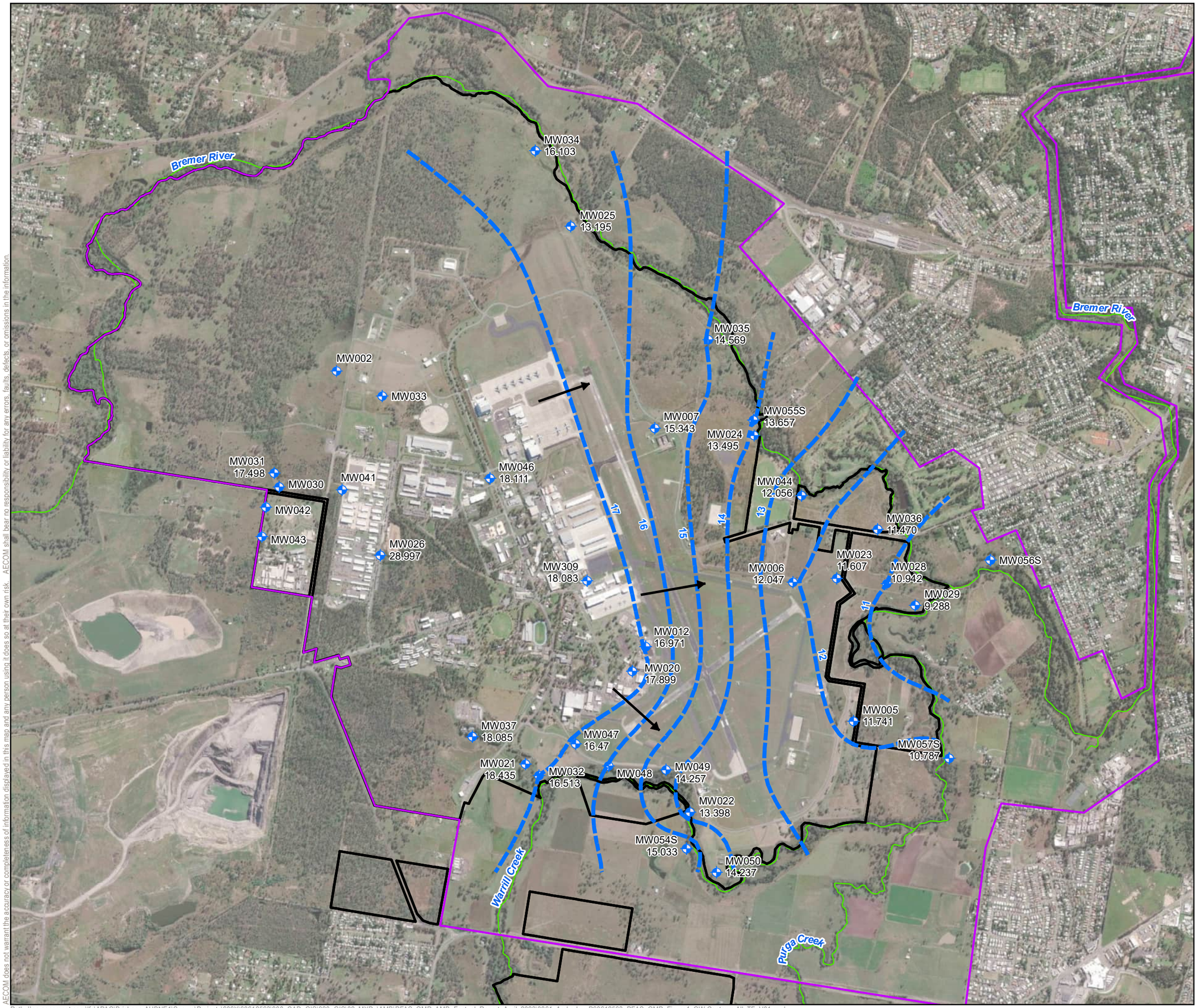

LEGEND

- Groundwater Monitoring Wells
- Management Area
- Base Boundary
- Groundwater Contours (mAHD)
- Groundwater flow direction

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 14: Inferred Groundwater Contours in the Alluvium / Tertiary Formation April / May 2023

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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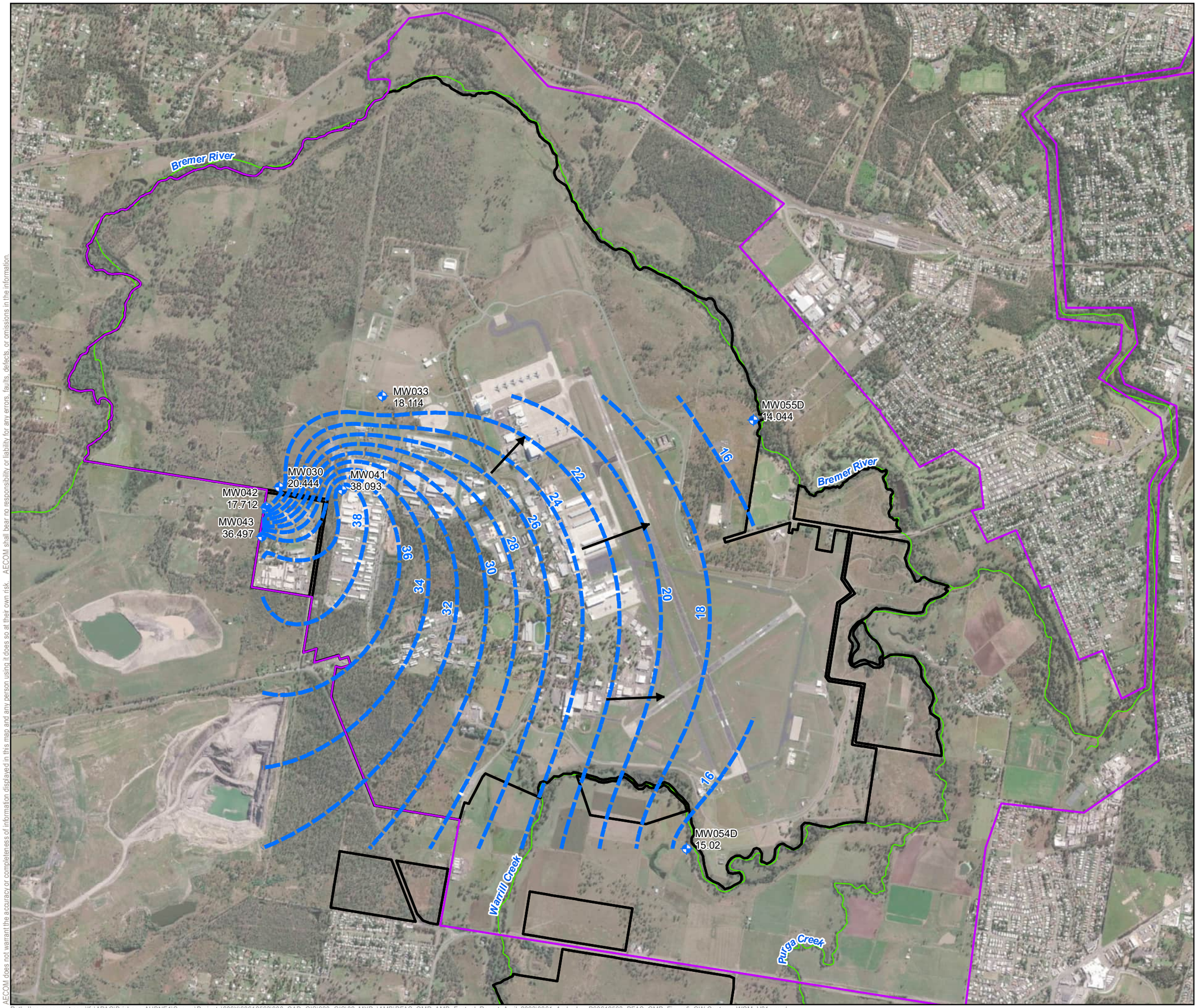

LEGEND

- Management Area
- Base Boundary
- Groundwater Contours (mAHD)
- Groundwater flow direction

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET -

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 15: Inferred Groundwater Contours in the Walloon Coal Measures April/May 2023

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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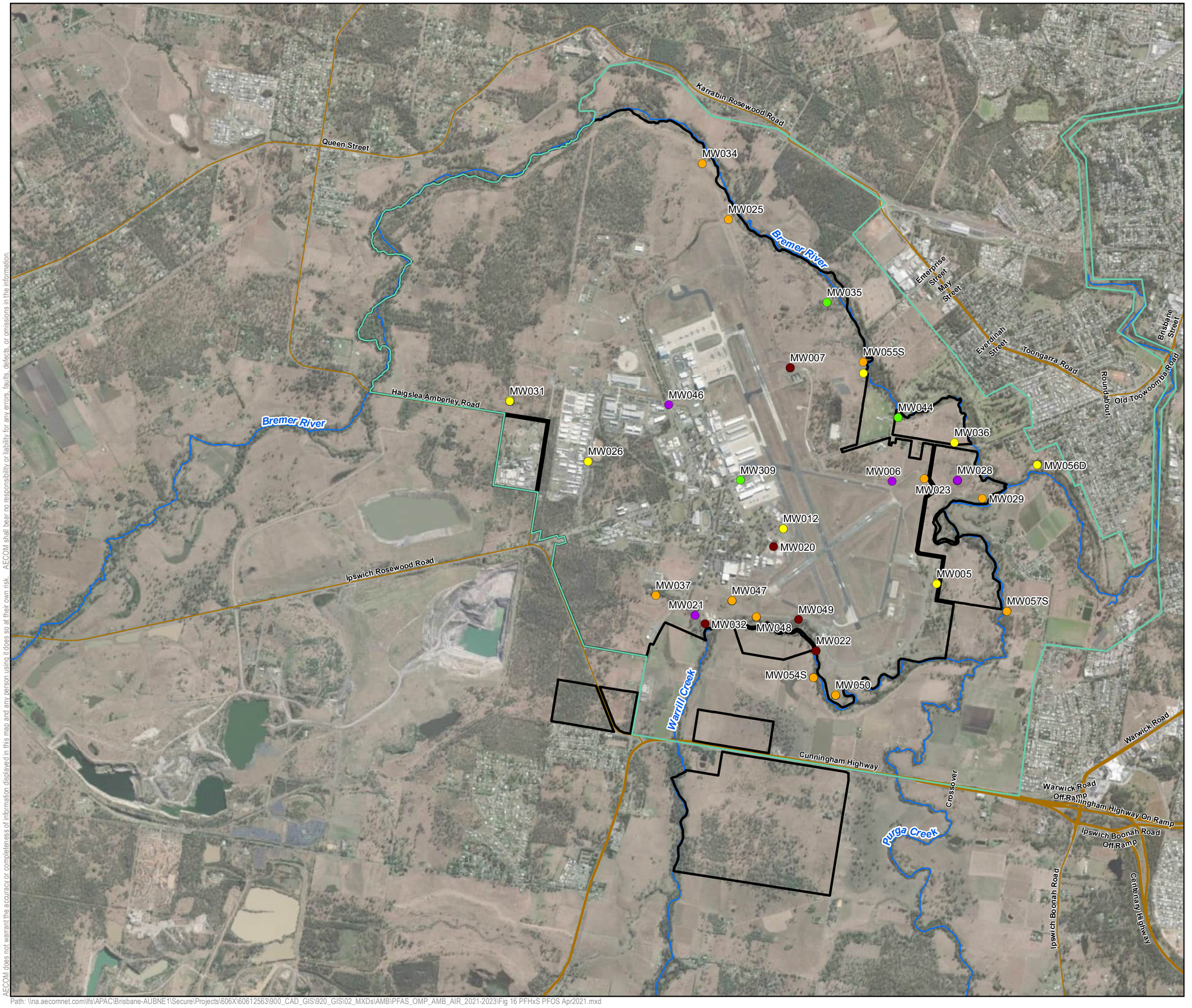

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LEGEND
Groundwater Analytical Results:
PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE	SIZE
1:35,000	A3
SHEET	COORDINATE SYSTEM
-	GDA 1994 MGA Zone 56

TITLE

Figure 16: Sum of PFHxS and PFOS Concentrations in Groundwater in Alluvium / Tertiary Formation Aquifer in April 2021

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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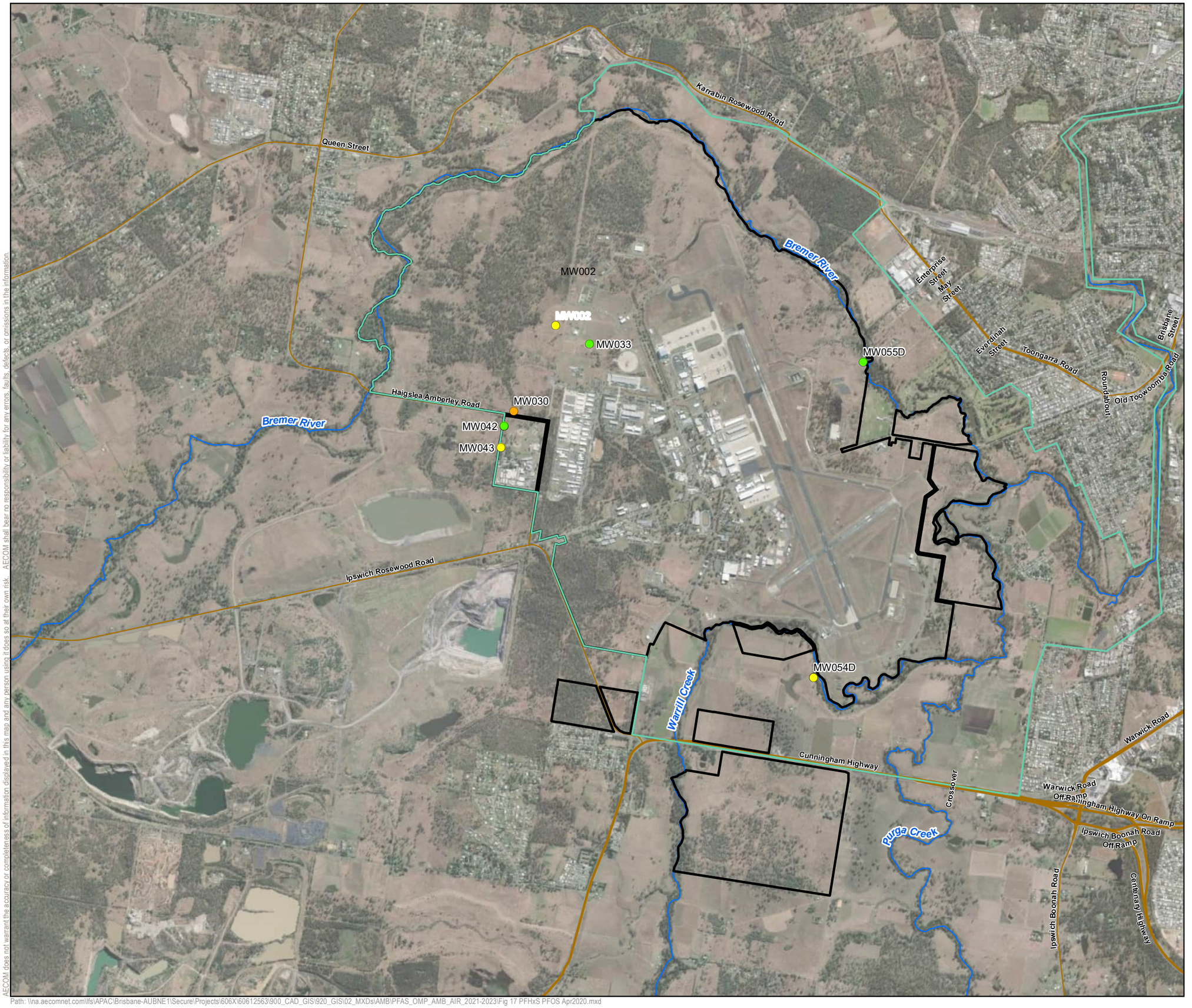

LEGEND
Groundwater Analytical Results:
PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE	1:35,000
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SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 17: Sum of PFHxS and PFOS Concentrations in Groundwater in Walloon Coal Measures Aquifer in April 2021

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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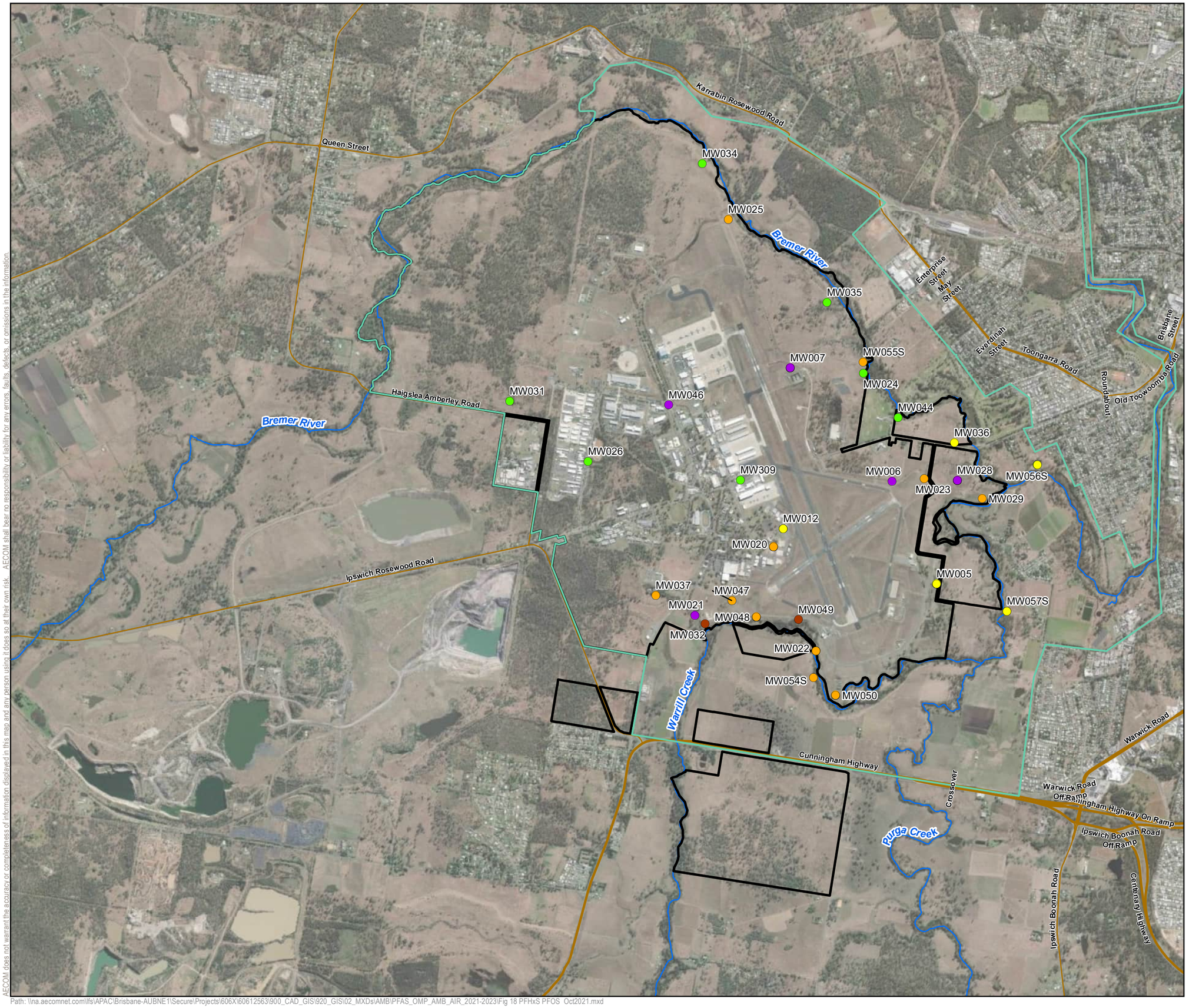

LEGEND
Groundwater Analytical Results:
PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

0 0.5 1 km

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 18: Sum of PFHxS and PFOS Concentrations in Groundwater in Alluvium / Tertiary Formation Aquifer in October 2021

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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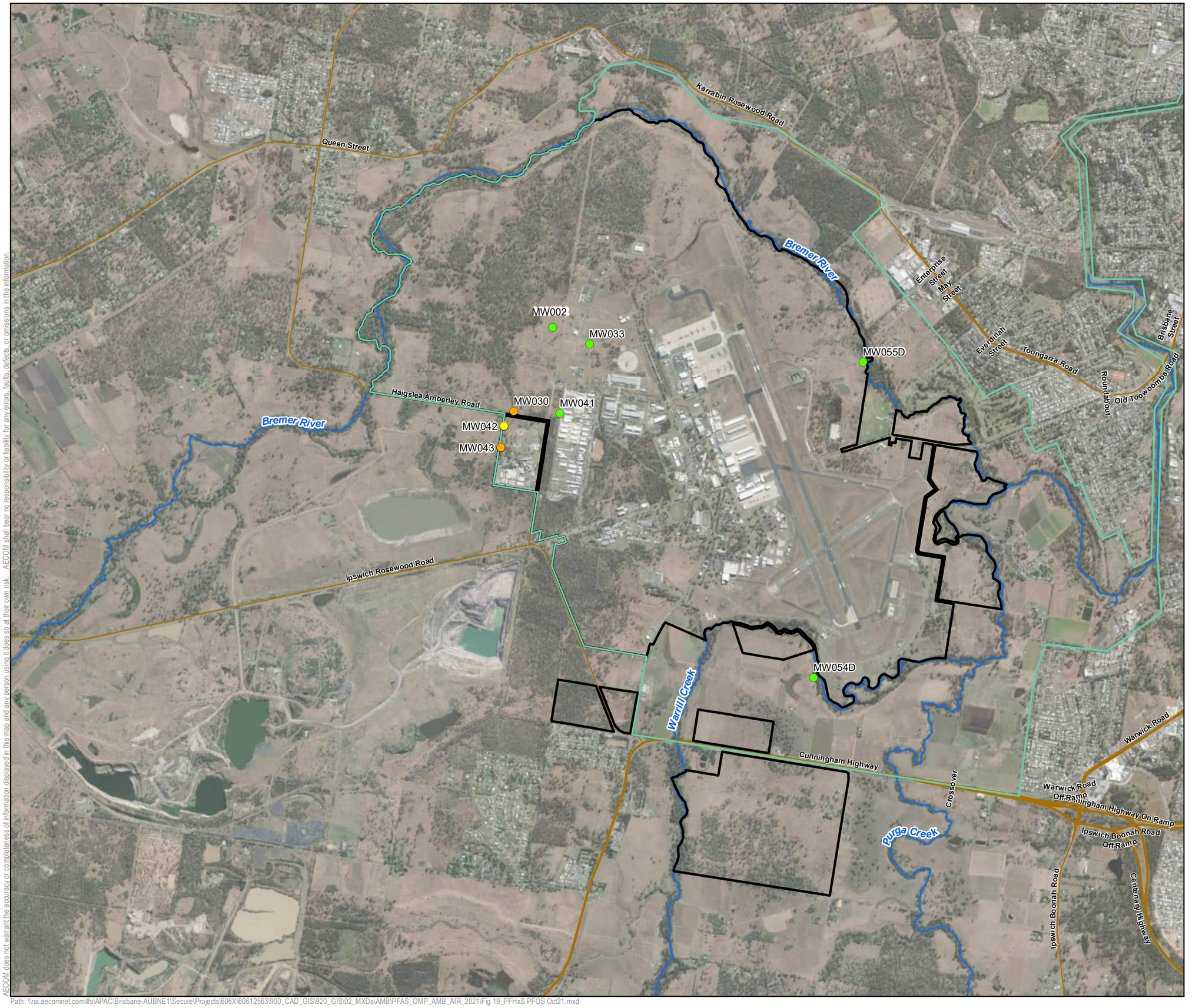

LEGEND
Groundwater Analytical Results:
PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area

km
0 0.5 1

AECOM

SCALE	SIZE
1:35,000	A3
SHEET	COORDINATE SYSTEM
-	GDA 1994 MGA Zone 56

TITLE

Figure 19: Sum of PFHxS and PFOS Concentrations in Groundwater in Walloon Coal Measures Aquifer in October 2021

PROJECT
PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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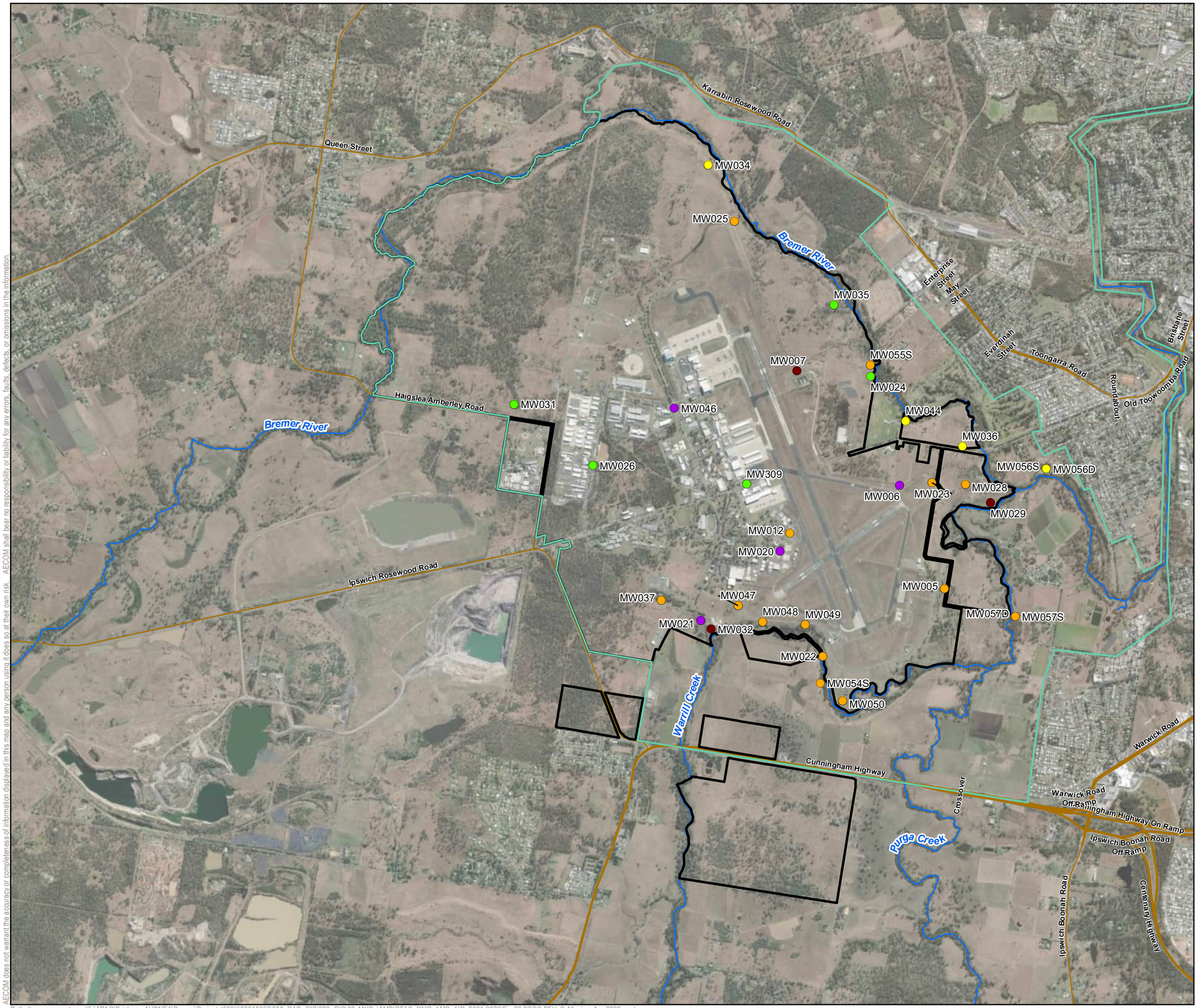

LEGEND
Groundwater Analytical Results:
PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

N

0 0.5 1 km

AECOM

SCALE 1:35,000	SIZE A3
SHEET	COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 20: Sum of PFHxS and PFOS Concentrations in Groundwater in Alluvium / Tertiary Formation Aquifer in March/April 2022

PROJECT
PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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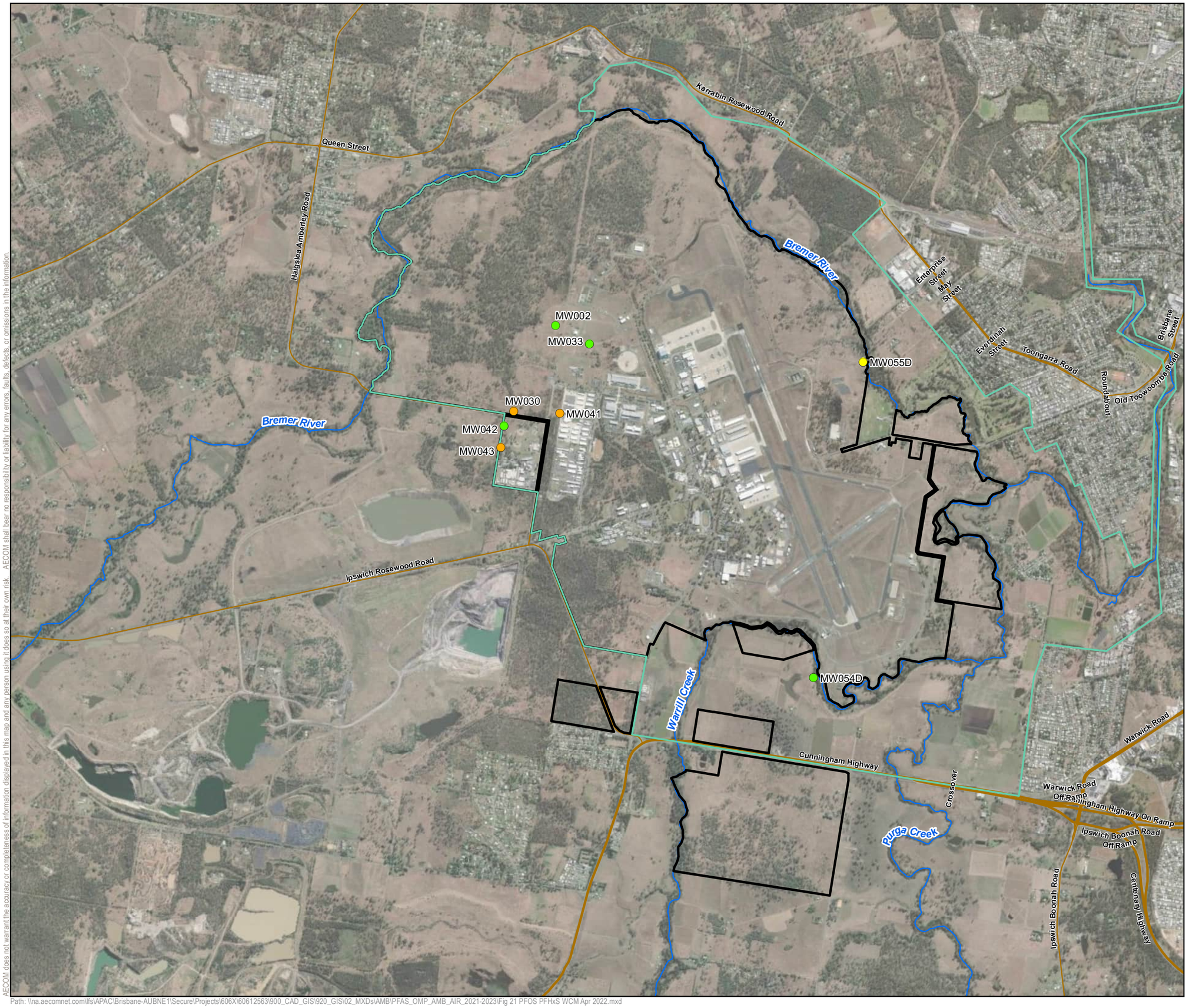

LEGEND
Groundwater Analytical Results:
PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE 1:35,000
SIZE A3
SHEET -
COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 21: Sum of PFHxS and PFOS Concentrations in Groundwater in Walloon Coal Measures Aquifer in April 2022

PROJECT
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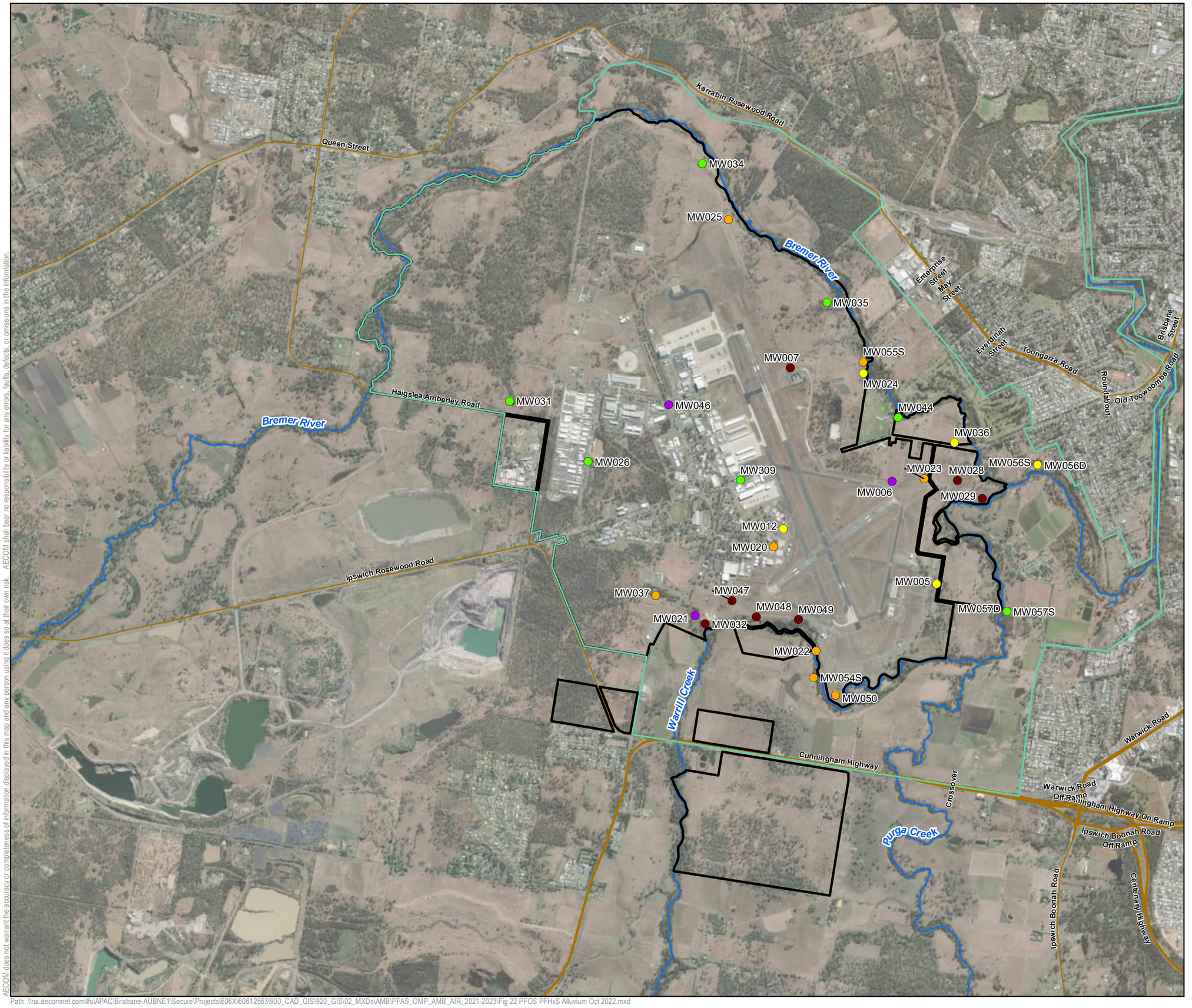

LEGEND
Groundwater Analytical Results:
PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE 1:35,000
SIZE A3
SHEET -
COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 22: Sum of PFHxS and PFOS Concentrations in Groundwater in Alluvium / Tertiary Formation Aquifer in October / November 2022

PROJECT
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CLIENT
DEPARTMENT OF DEFENCE

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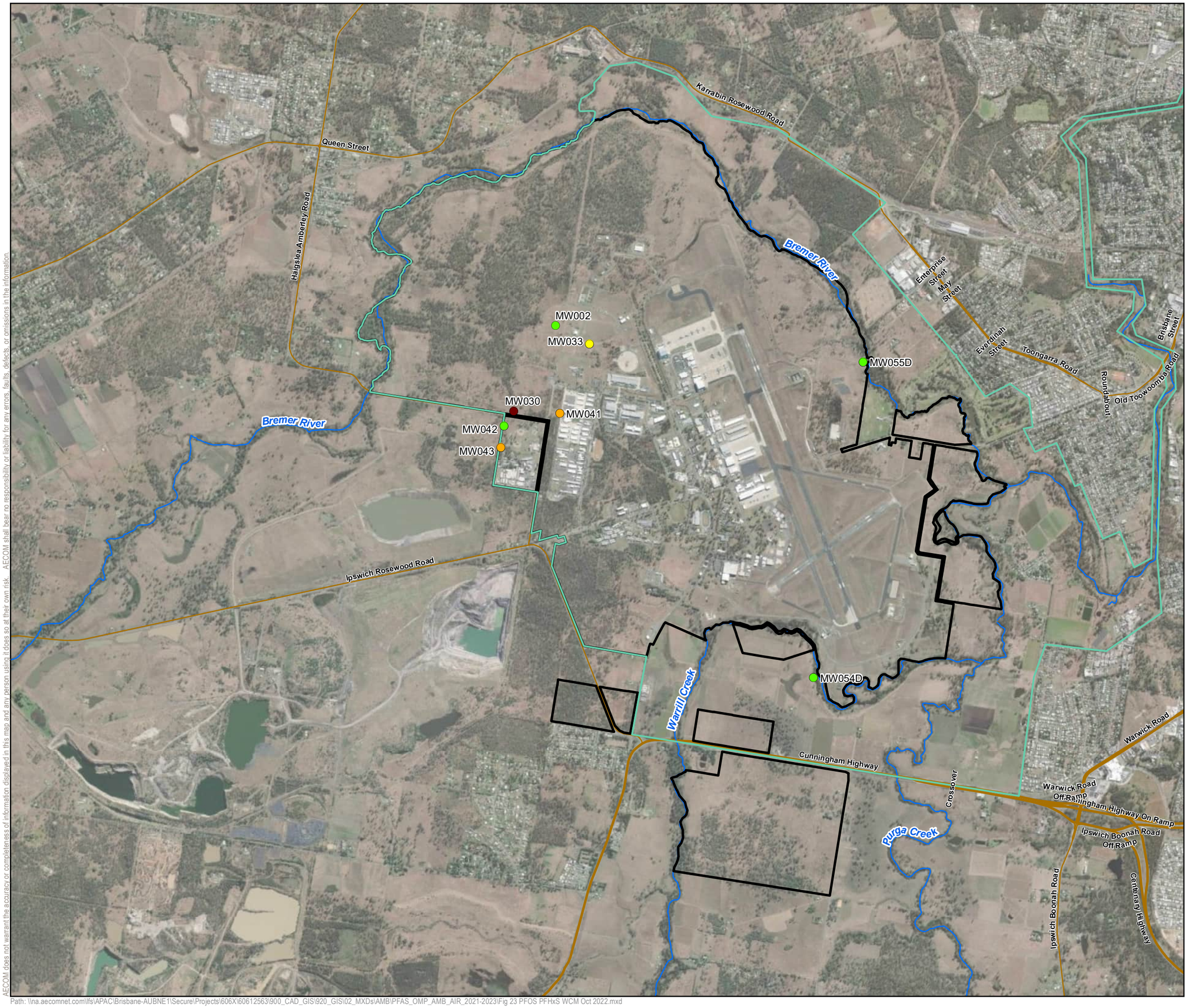

LEGEND
Groundwater Analytical Results:
PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE 1:35,000
SIZE A3
SHEET -
COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 23: Sum of PFHxS and PFOS Concentrations in Groundwater in Walloon Coal Measures Aquifer in October / November 2022

PROJECT
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DEPARTMENT OF DEFENCE

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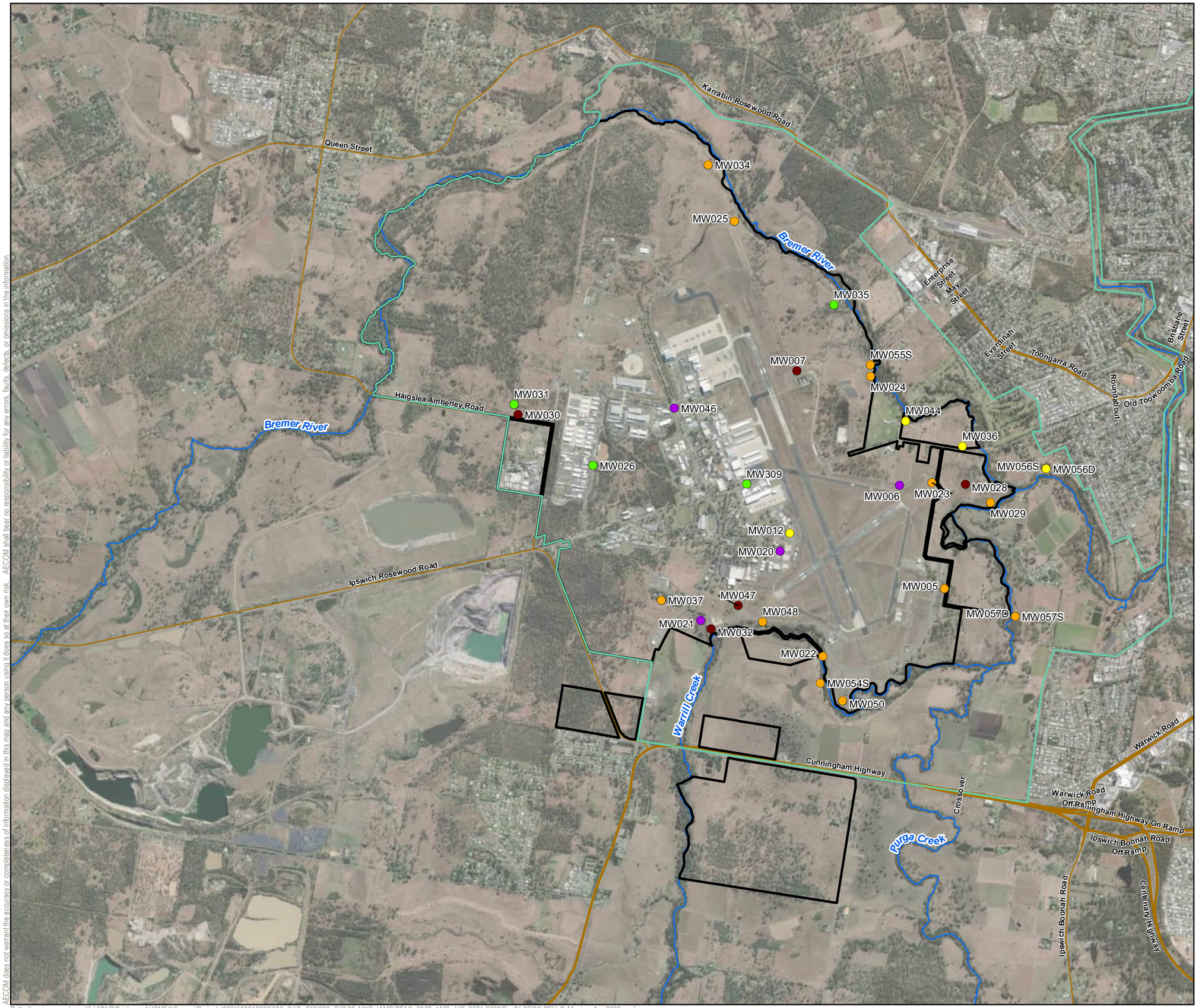

LEGEND
Groundwater Analytical Results:
PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

N

0 0.5 1 km

AECOM

SCALE	SIZE
1:35,000	A3
SHEET	COORDINATE SYSTEM
	GDA 1994 MGA Zone 56

TITLE

Figure 24: Sum of PFHxS and PFOS Concentrations in Groundwater in Alluvium / Tertiary Formation Aquifer in April / May 2023

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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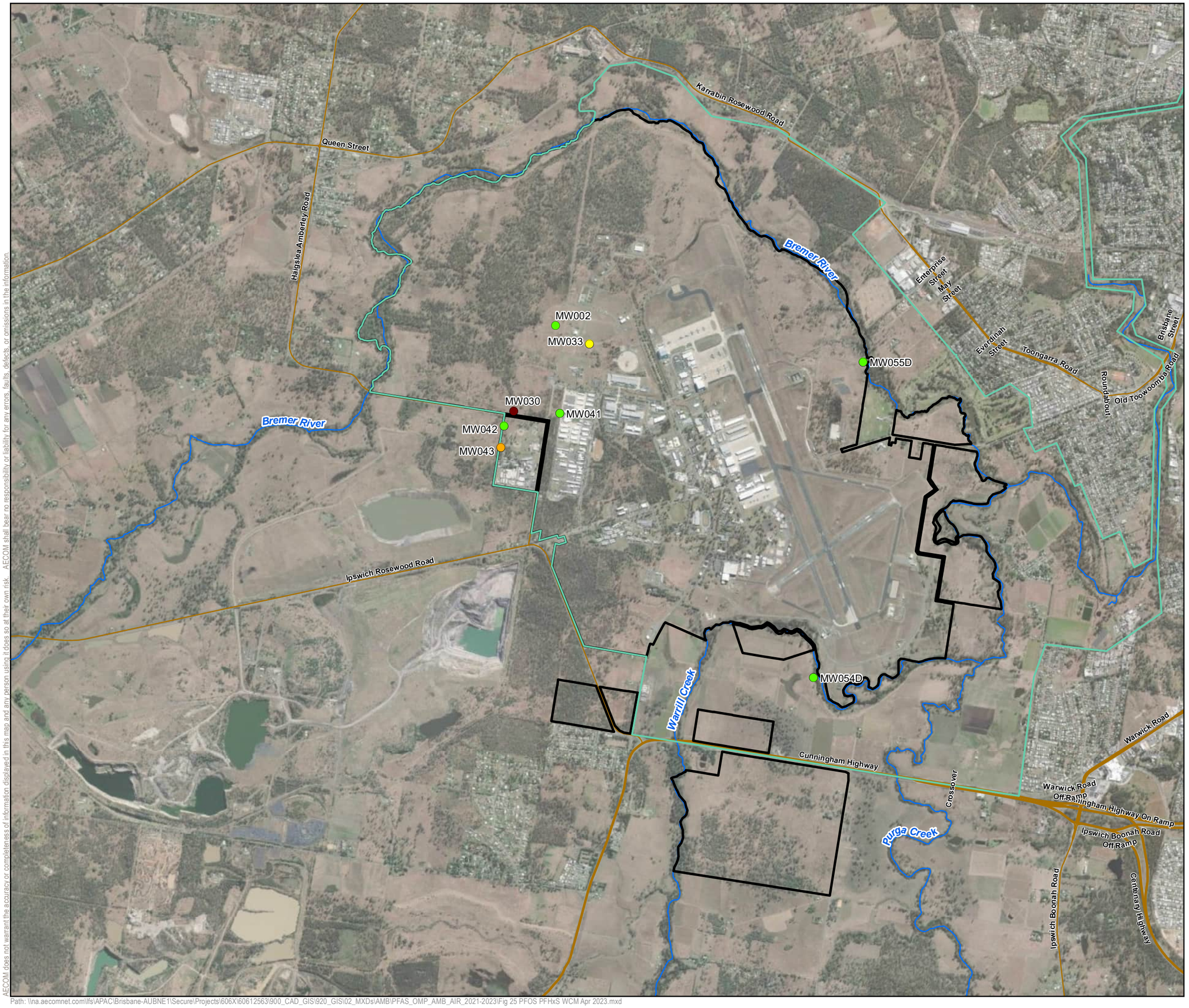

LEGEND
Groundwater Analytical Results:
PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 25: Sum of PFHxS and PFOS Concentrations in Groundwater in Walloon Coal Measures Aquifer in April / May 2023

PROJECT

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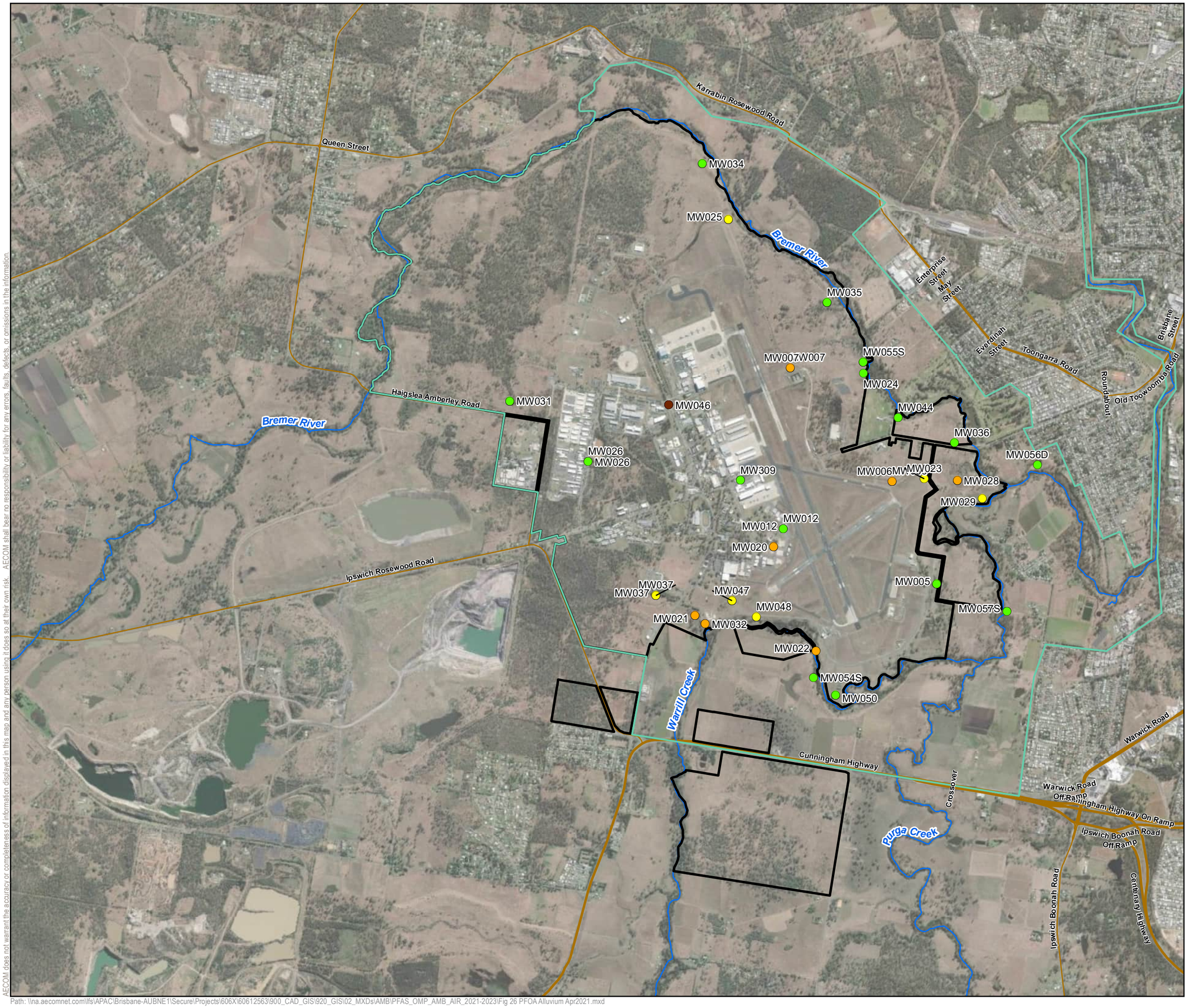

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LEGEND
Groundwater Analytical Results: PFOA Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

0 0.5 1 km

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 26: PFOA Concentrations in Groundwater in Alluvium / Tertiary Formation Aquifer in April 2021

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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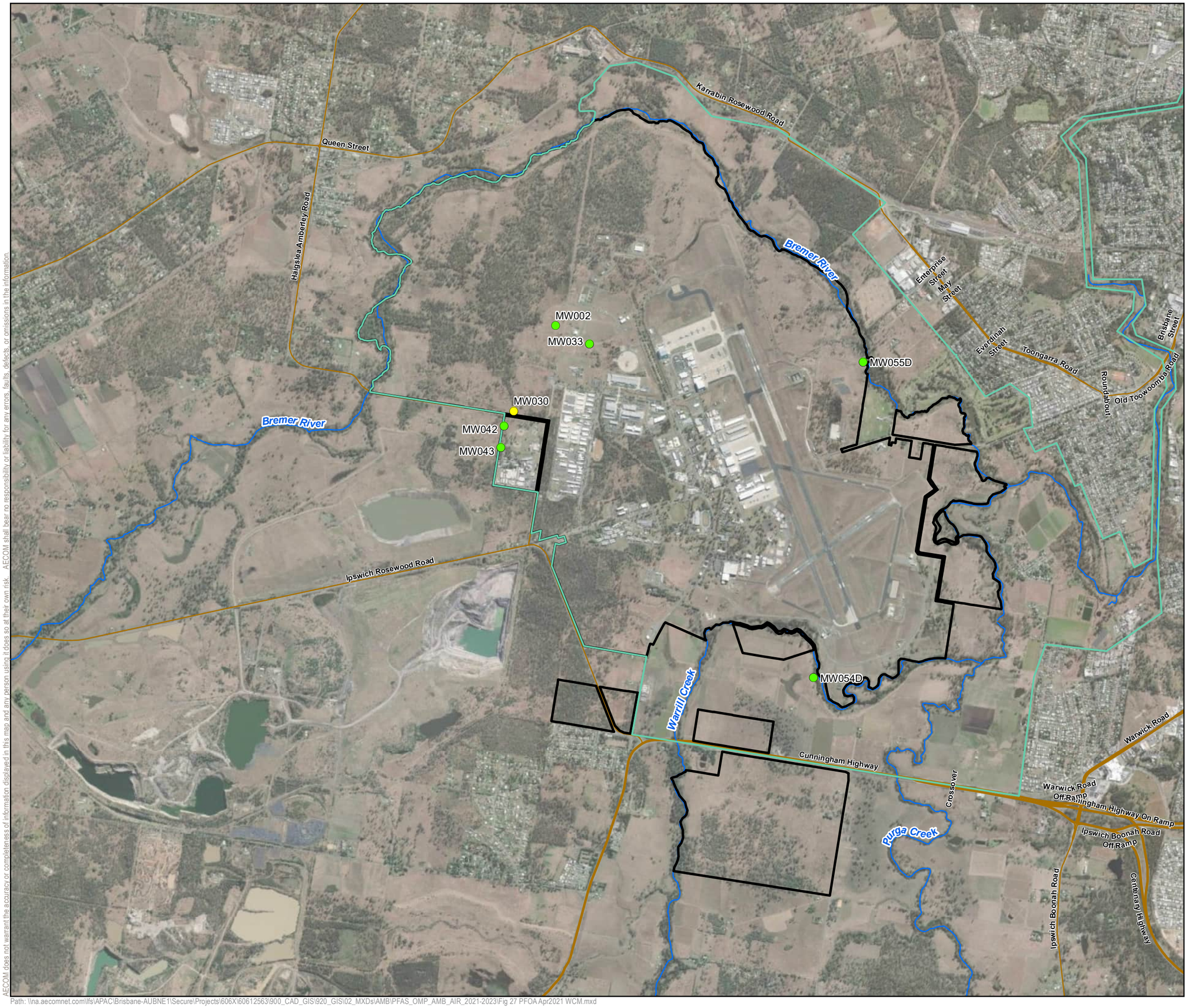

LEGEND
Groundwater Analytical Results: PFOA Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE	SIZE
1:35,000	A3
SHEET	COORDINATE SYSTEM
-	GDA 1994 MGA Zone 56

TITLE

Figure 27: PFOA Concentrations in Groundwater in Walloon Coal Measures Aquifer in April 2021

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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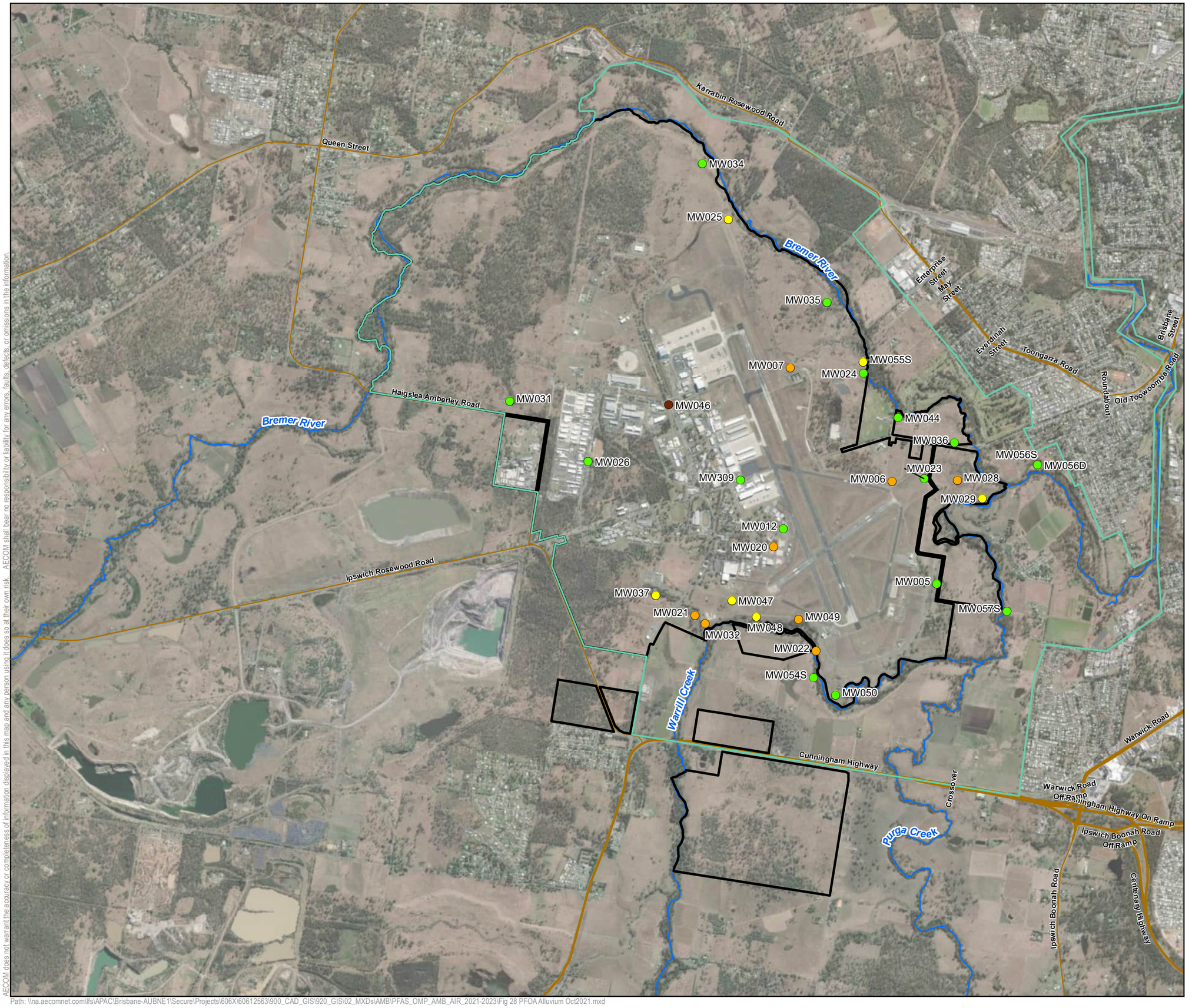

LEGEND
Groundwater Analytical Results: PFOA Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

0 0.5 1 km

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 28: PFOA Concentrations in Groundwater in Alluvium / Tertiary Formation Aquifer in October 2021

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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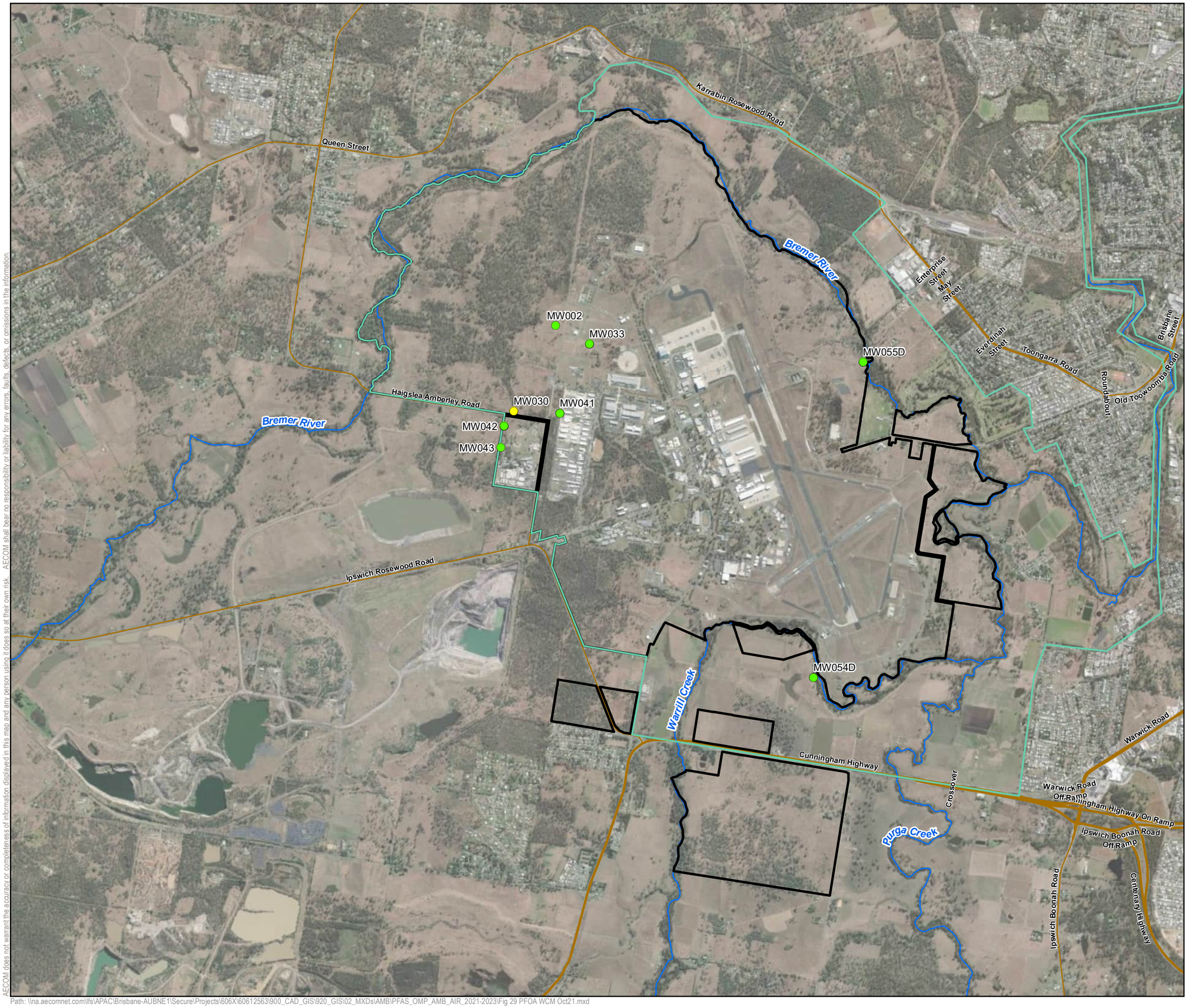

LEGEND
Groundwater Analytical Results: PFOA Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE
Figure 29: PFOA Concentrations in Groundwater in Walloon Coal Measures Aquifer in October 2021

PROJECT
PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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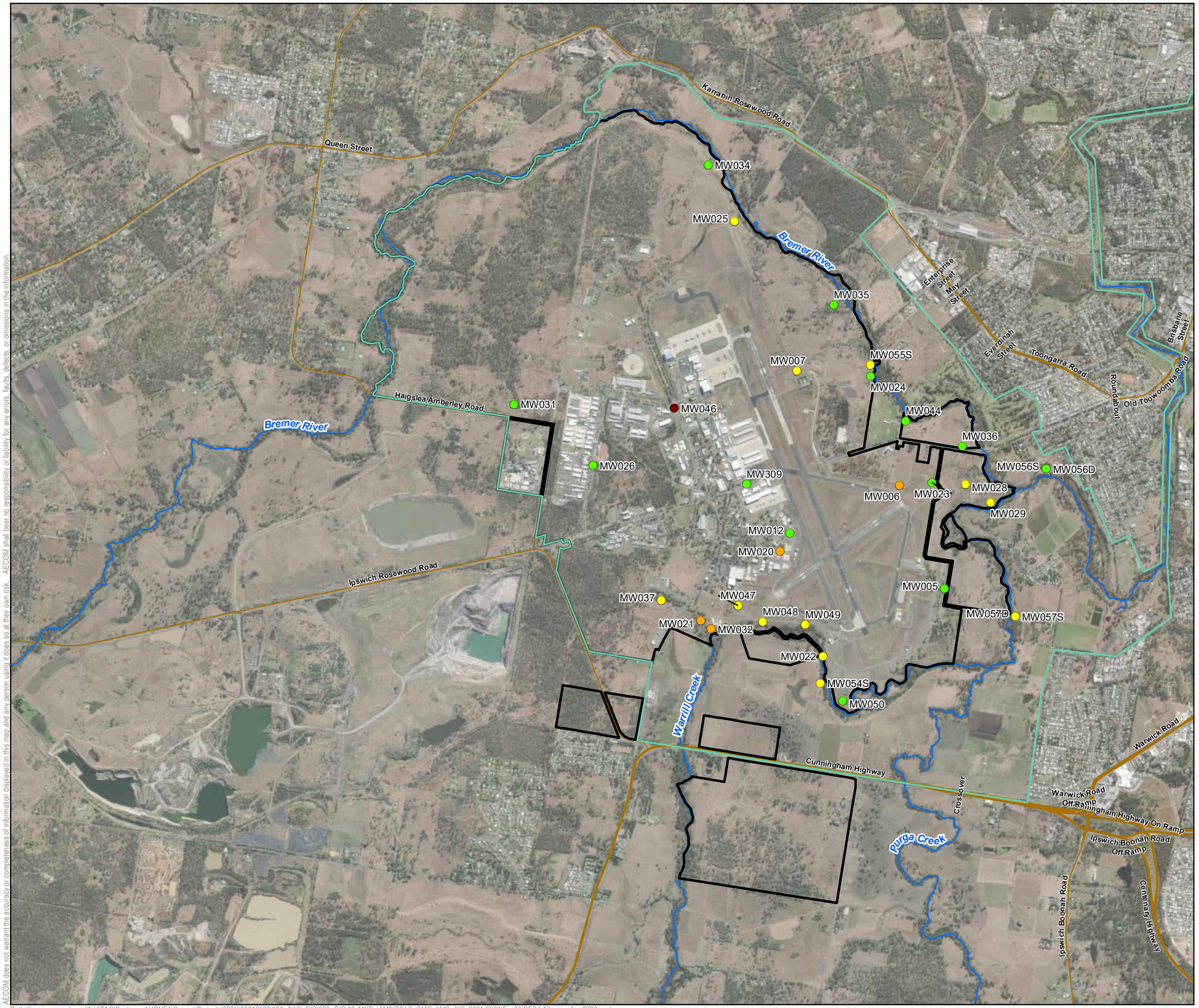

LEGEND
Groundwater Analytical Results:
PFOA - Concentrations (µg/L)

- >50
- 10-50
- 0.56-10
- LOR-0.56
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

N

0 0.5 1 km

AECOM

SCALE 1:35,000
SIZE A3
SHEET
COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 30: PFOA Concentrations in Groundwater in Alluvium / Tertiary Formation Aquifer in March/April 2022

PROJECT
PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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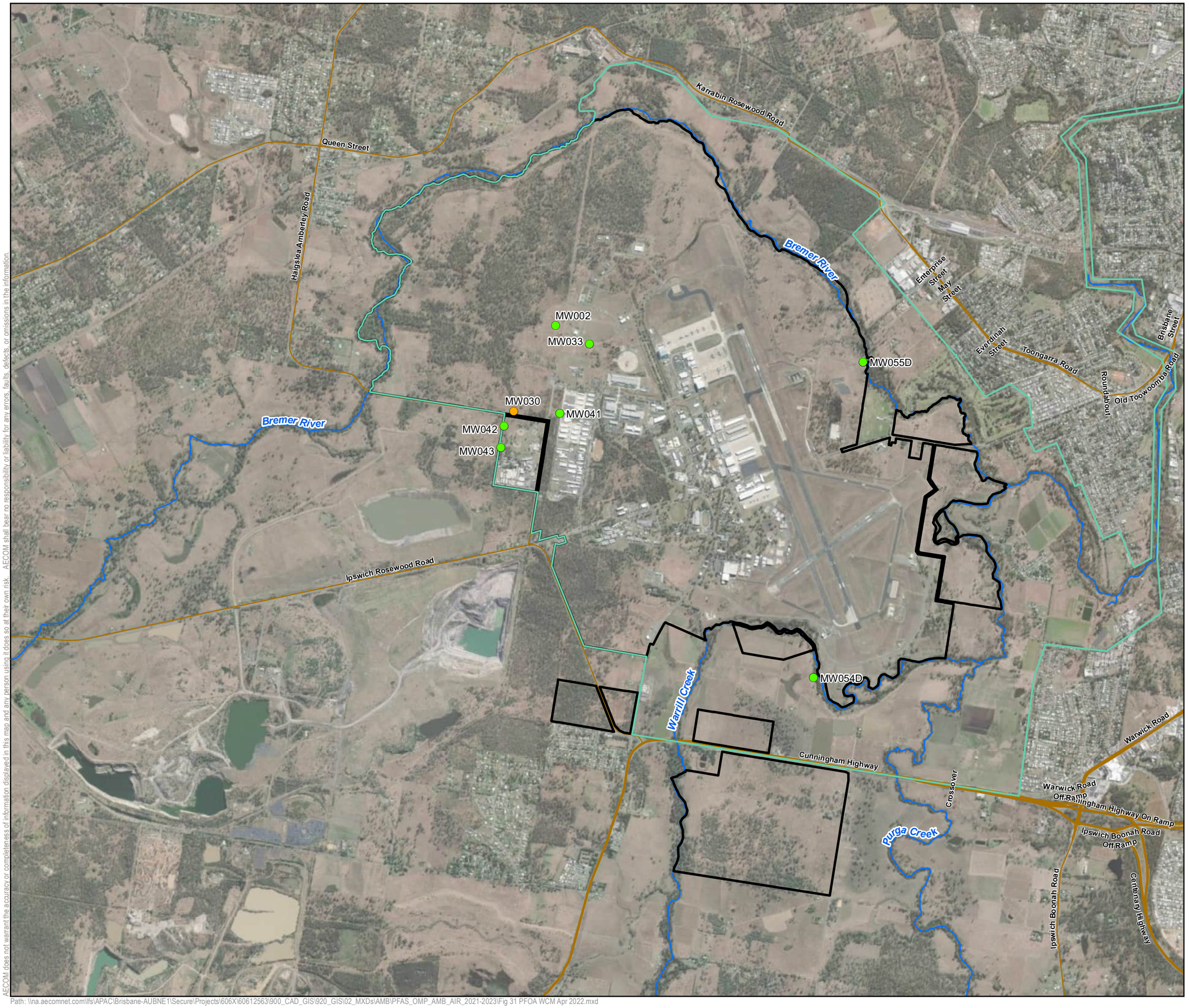

LEGEND
Groundwater Analytical Results: PFOA Concentrations (µg/L)

- >50
- 10-50
- 0.56-10
- LOR-0.56
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

N

0 0.5 1 km

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 31: PFOA Concentrations in Groundwater in Walloon Coal Measures Aquifer in March/April 2022

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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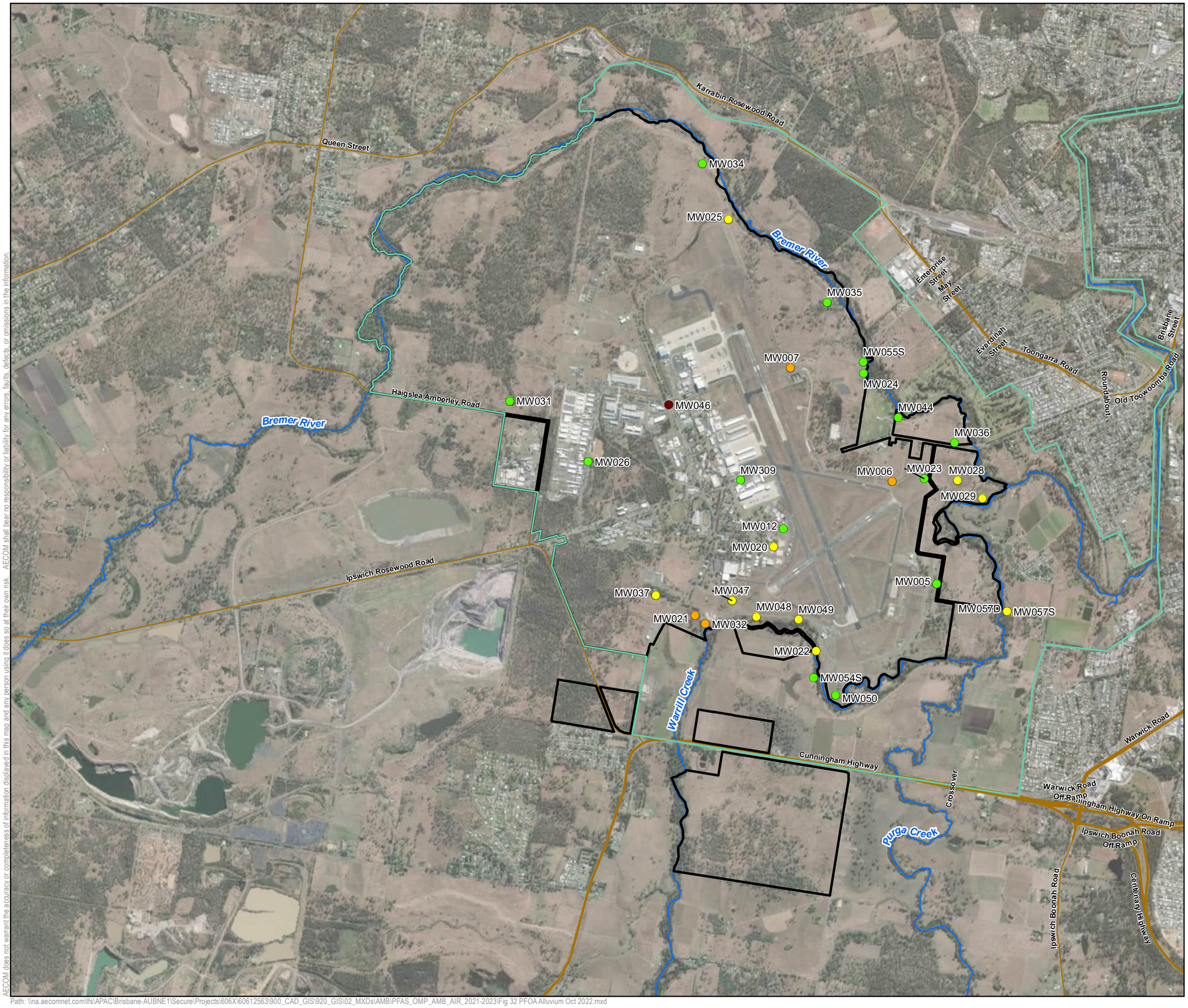

LEGEND
Groundwater Analytical Results:
PFOA - Concentrations (µg/L)

- >50
- 10-50
- 0.56-10
- LOR-0.56
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

N

0 0.5 1 km

AECOM

SCALE 1:35,000
SIZE A3
SHEET -
COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 32: PFOA Concentrations in Groundwater in Alluvium / Tertiary Formation Aquifer in October / November 2022

PROJECT
PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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DEPARTMENT OF DEFENCE

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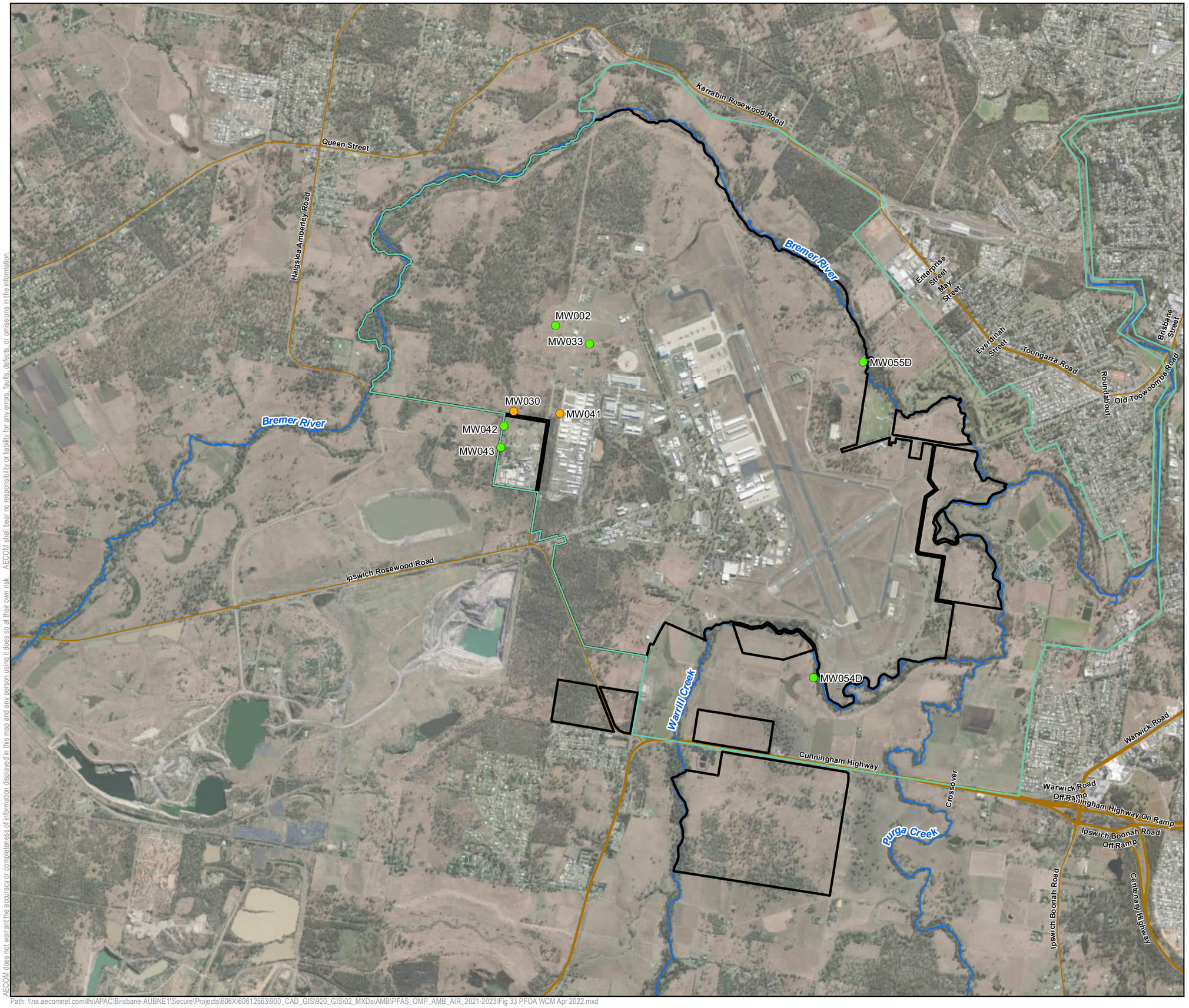

LEGEND
Groundwater Analytical Results:
PFOA - Concentrations (µg/L)

- >50
- 10-50
- 0.56-10
- LOR-0.56
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE 1:35,000
SIZE A3
SHEET -
COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 33: PFOA Concentrations in Groundwater in Walloon Coal Measures Aquifer in October / November 2022

PROJECT
PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT
DEPARTMENT OF DEFENCE

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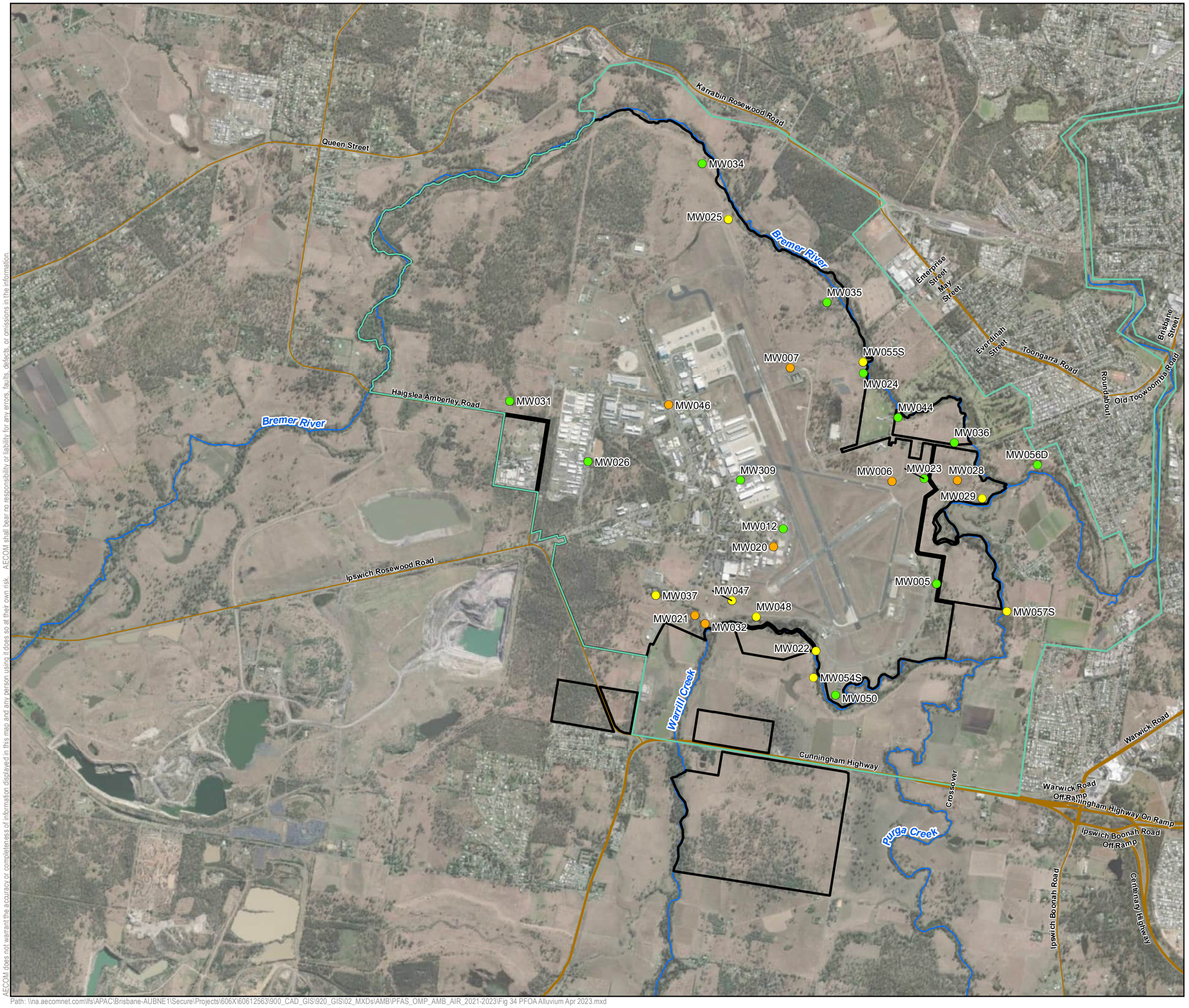

LEGEND
Groundwater Analytical Results: PFOA Concentrations (µg/L)

- >50
- 10-50
- 0.56-10
- LOR-0.56
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE	SIZE
1:35,000	A3
SHEET	COORDINATE SYSTEM
-	GDA 1994 MGA Zone 56

TITLE

Figure 34: PFOA Concentrations in Groundwater in Alluvium / Tertiary Formation Aquifer in April/May 2023

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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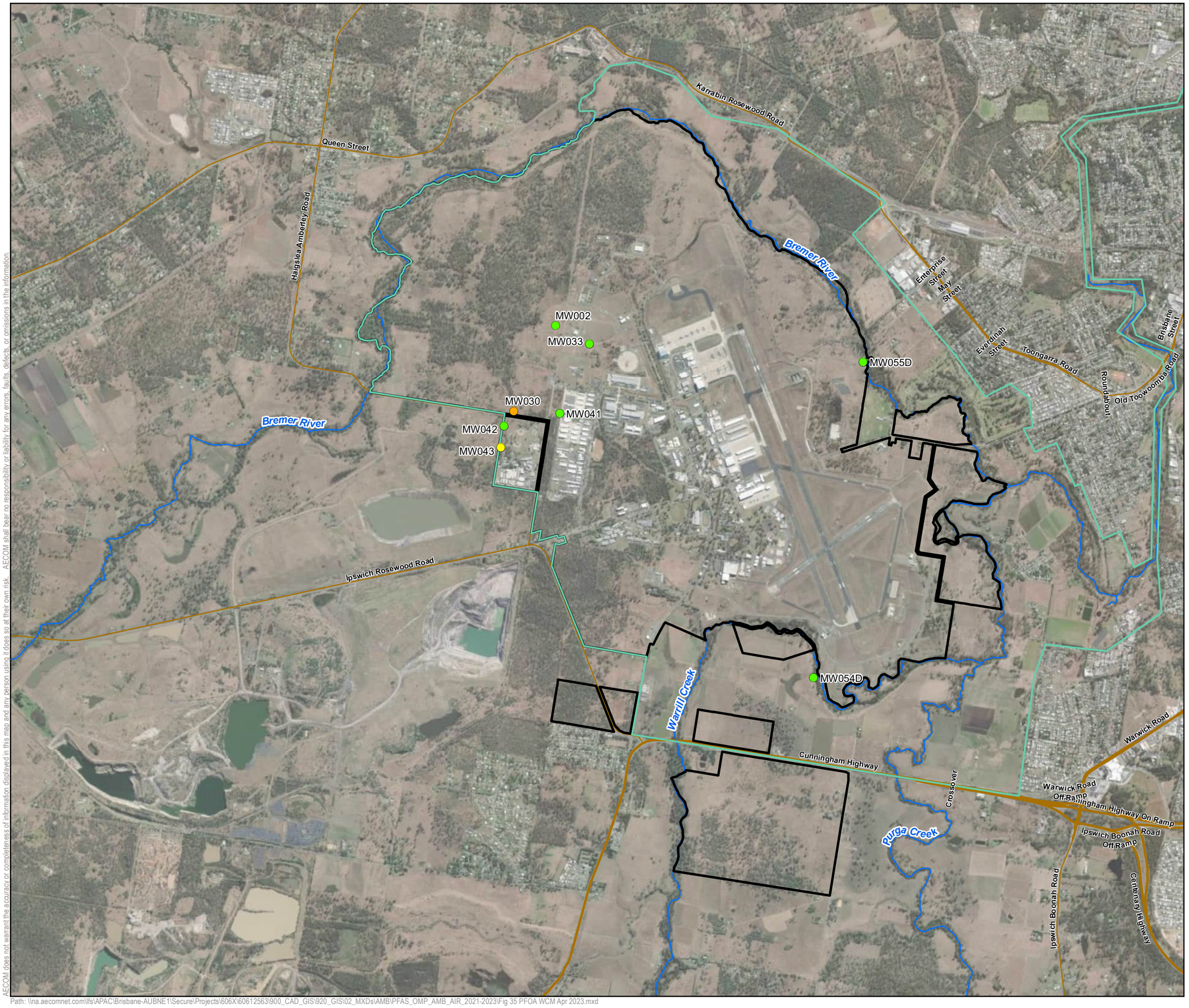


LEGEND
Groundwater Analytical Results: PFOA Concentrations (µg/L)

- >50
- 10-50
- 0.56-10
- LOR-0.56
- <LOR
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

N

0 0.5 1 km

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 35: PFOA Concentrations in Groundwater in Walloon Coal Measures Aquifer in April / May 2023

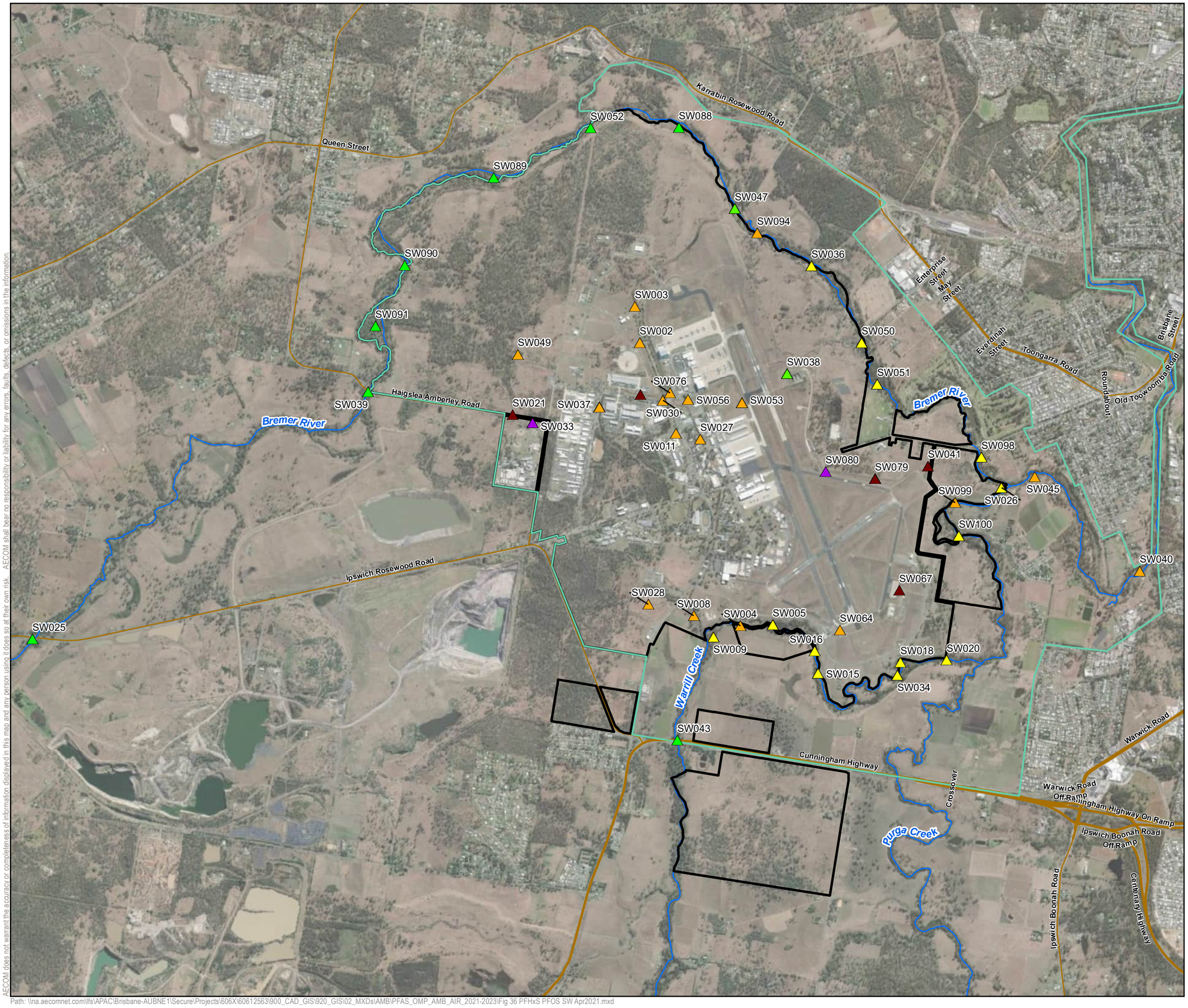
PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

Path: \\na.aecomnet.com\lfs\APAC\Brisbane-AUBNE1\Secure\Projects\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\AMB\PFAS_OMP_AMB_AIR_2021-2023\Fig 35 PFOA WCM Apr 2023.mxd



LEGEND
Surface Water Analytical Results: PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

N

0 0.5 1 km

AECOM

SCALE 1:35,000
SIZE A3
SHEET -
COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 36: Sum of PFHxS and PFOS Concentrations in Surface Water in March/April 2021

PROJECT
PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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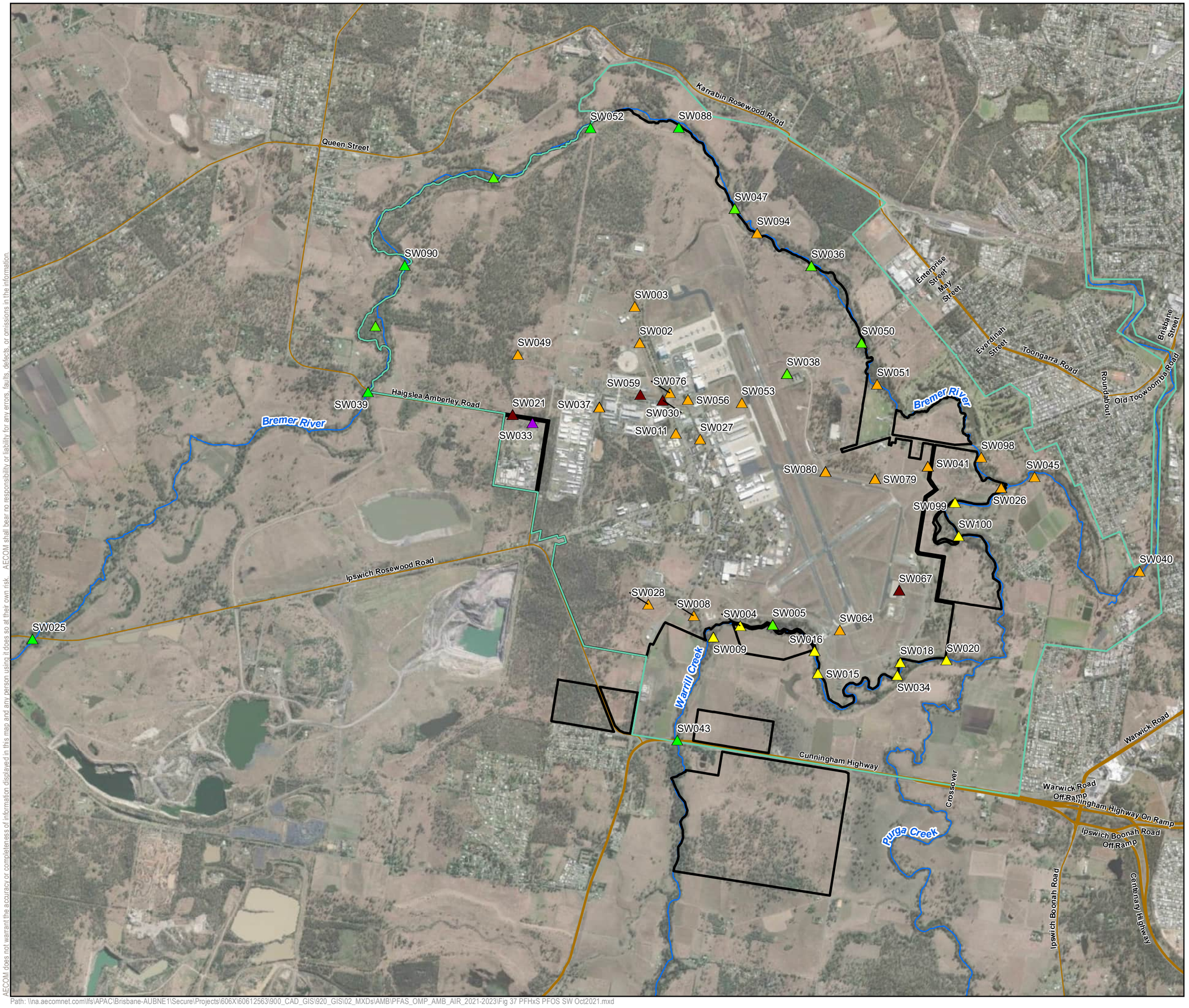

LEGEND
Surface Water Analytical Results: PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE 1:35,000
SIZE A3
SHEET -
COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 37: Sum of PFHxS and PFOS Concentrations in Surface Water in October 2021

PROJECT
PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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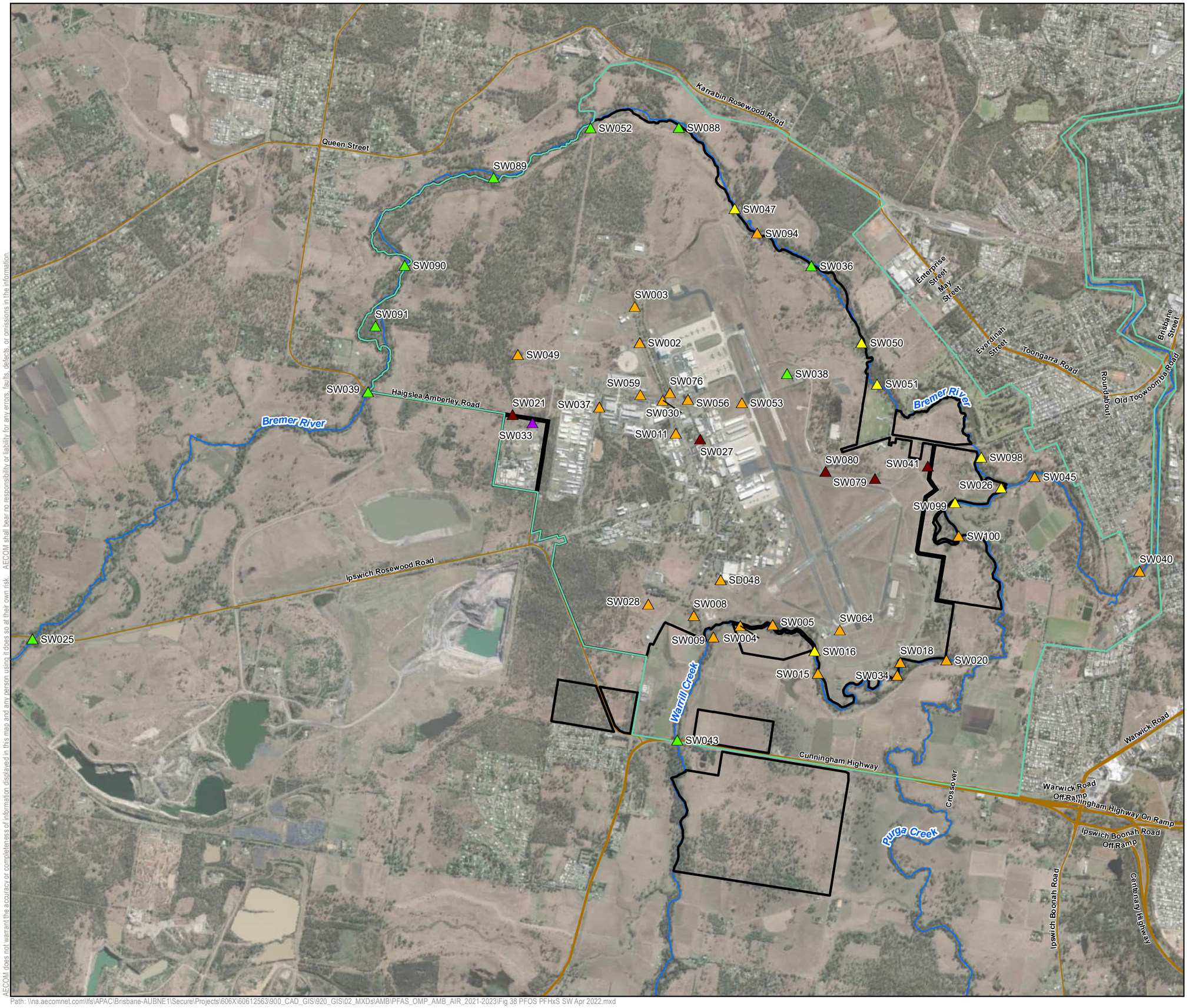
Path: \\na.aecomnet.com\lfs\APAC\Brisbane-AUBNE1\Secure\Projects\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\AMB\PFAS_OMP_AMB_AIR_2021-2023\Fig 37 PFHxS PFOS SW Oct2021.mxd



LEGEND
Surface Water Analytical Results:
PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area

km
0 0.5 1

AECOM

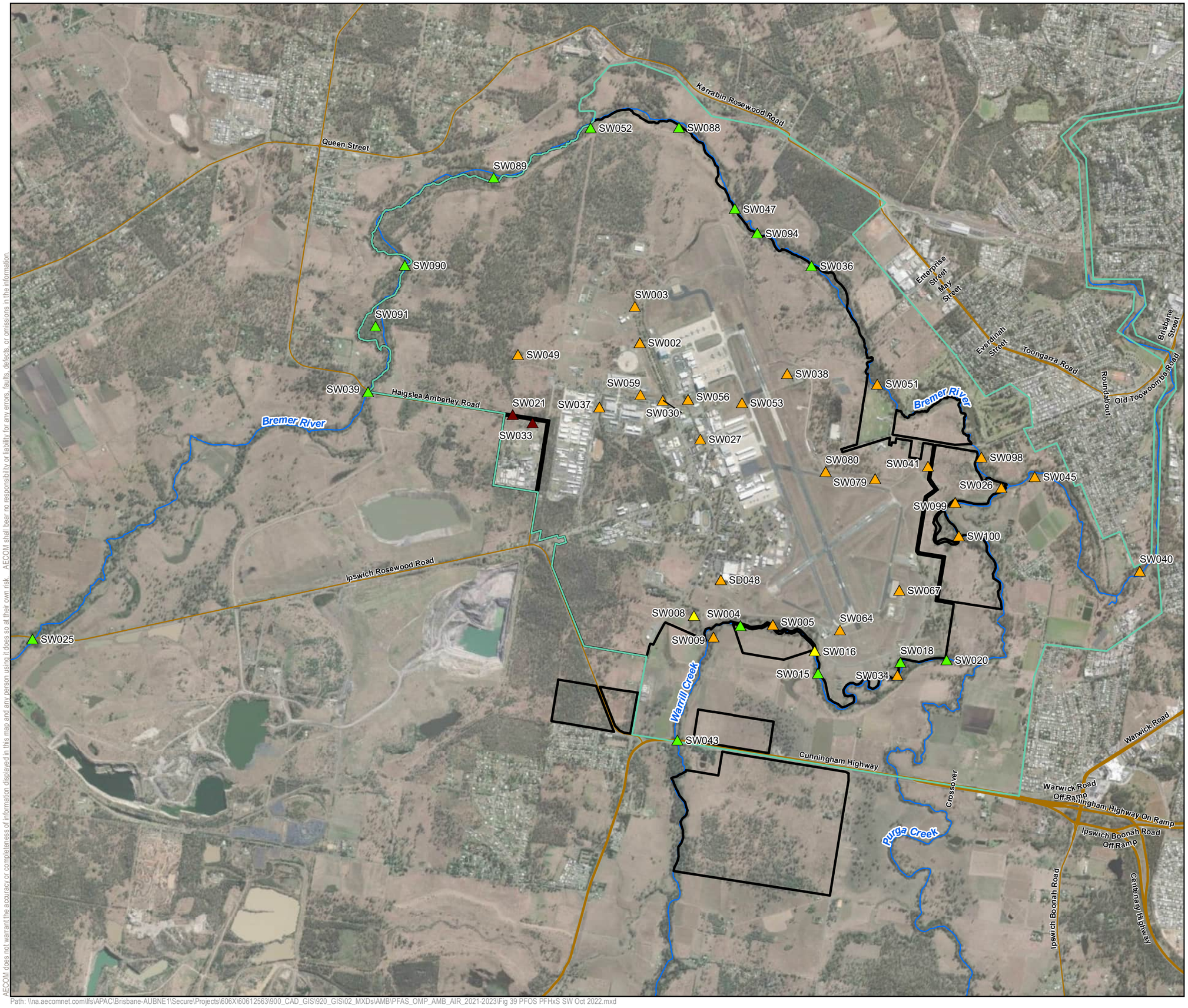
SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE
Figure 38: Sum of PFHxS and PFOS Concentrations in Surface Water in March/April 2022

PROJECT
PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT
DEPARTMENT OF DEFENCE

Path: \\na.aecomnet.com\lfs\APAC\Brisbane-AUBNE1\Secure\Projects\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\AMB\PFAS_OMP_AMB_AIR_2021-2023\Fig 38 PFOS PFHxS SW Apr 2022.mxd



LEGEND

Surface Water Analytical Results: PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area

km
0 0.5 1

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 39: Sum of PFHxS and PFOS Concentrations in Surface Water in October/November 2022

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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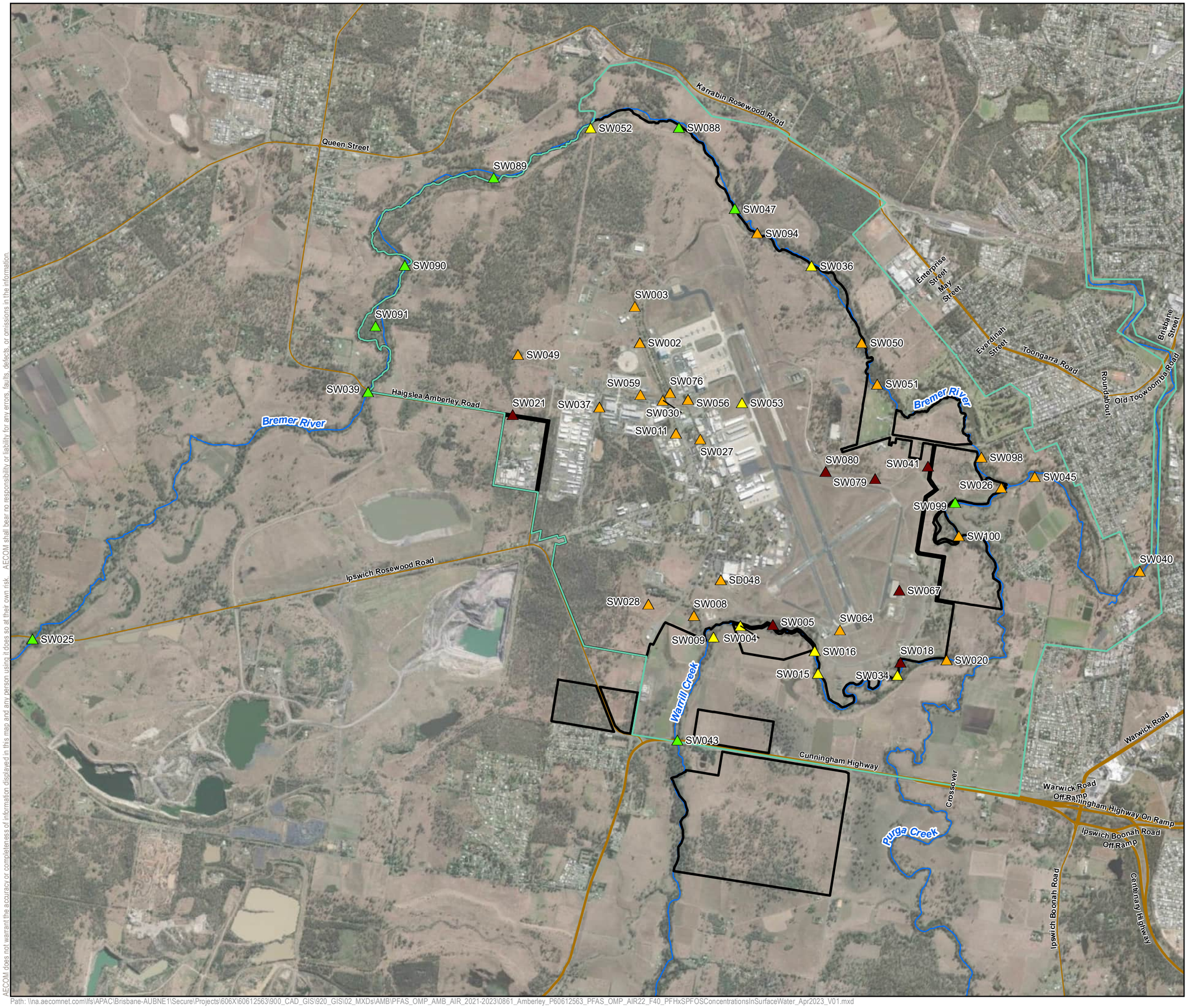

LEGEND
Surface Water Analytical Results: PFOS + PFHxS Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area

km
0 0.5 1

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE
Figure 40: Sum of PFHxS and PFOS Concentrations in Surface Water in April/May 2023

PROJECT
PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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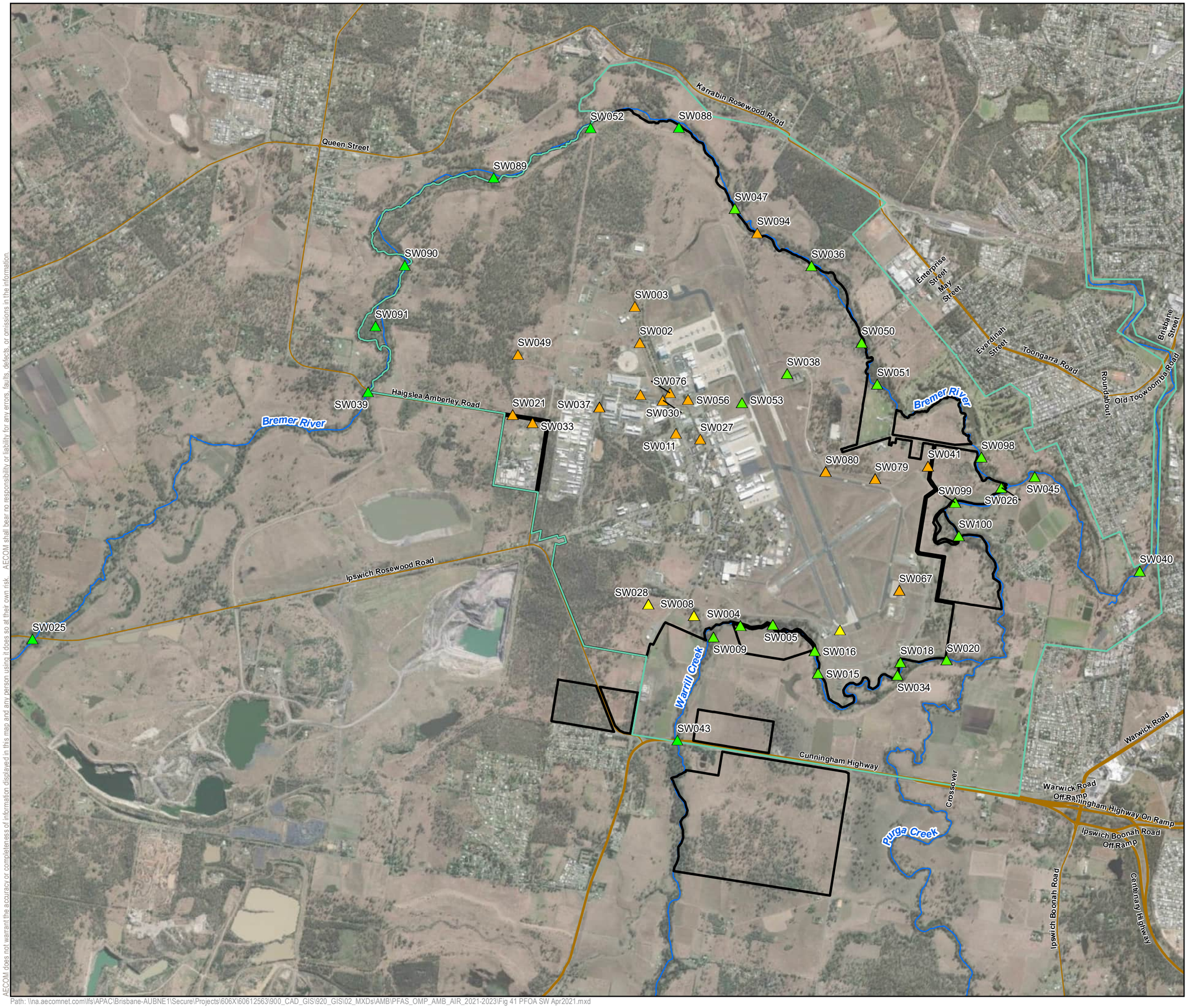

LEGEND
Surface Water Analytical Results: PFOA Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE
Figure 41: PFOA Concentrations in Surface Water in March/April 2021

PROJECT
PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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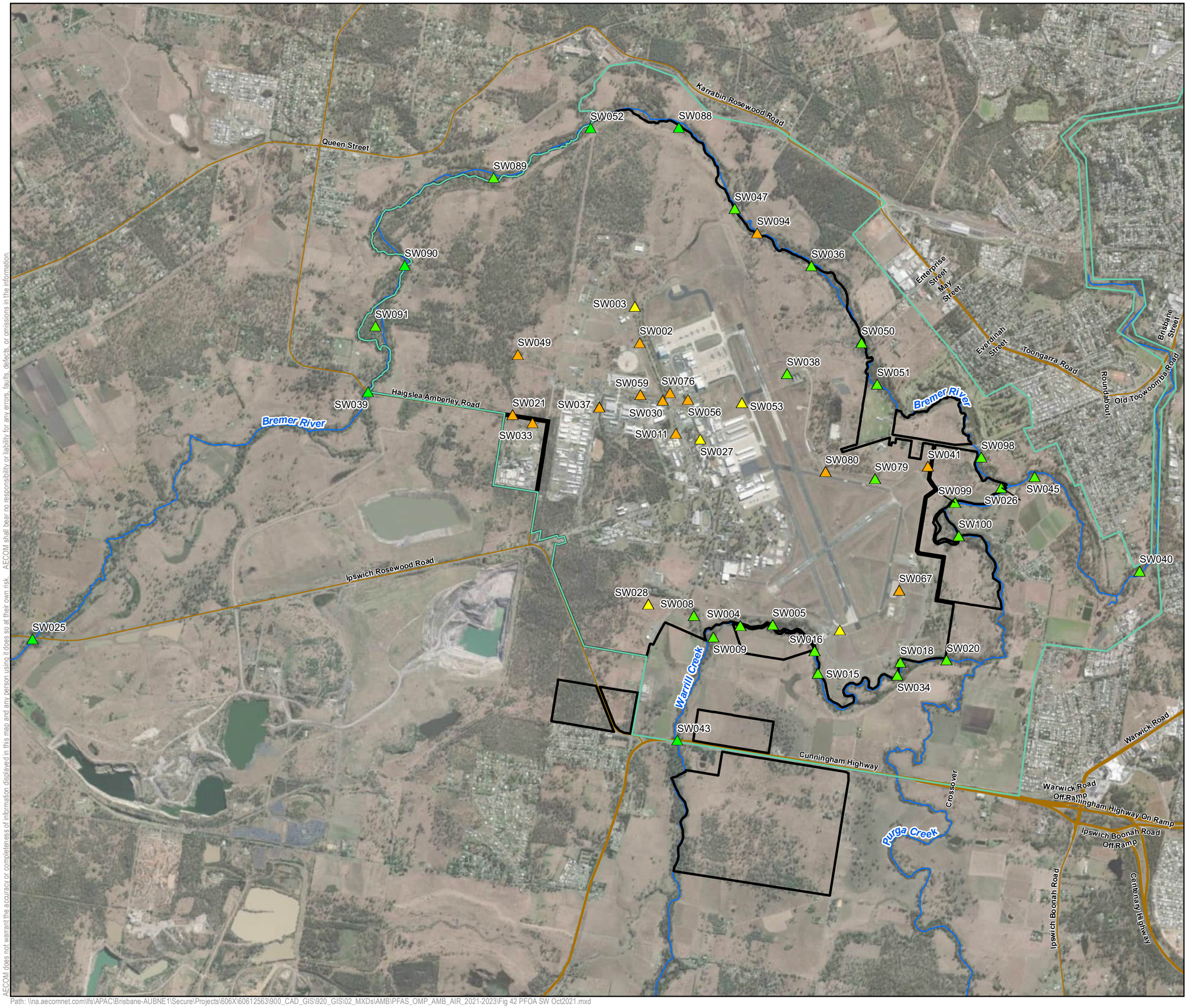
DEPARTMENT OF DEFENCE

Path: \\na.aecomnet.com\lfs\APAC\Brisbane-AUBNE1\Secure\Projects\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\AMB\PFAS_OMP_AMB_AIR_2021-2023\Fig 41 PFOA SW Apr2021.mxd



LEGEND
Surface Water Analytical Results: PFOA Concentrations (µg/L)

- >50
- 10-50
- 0.07-10
- LOR-0.07
- <LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

0 0.5 1 km

AECOM

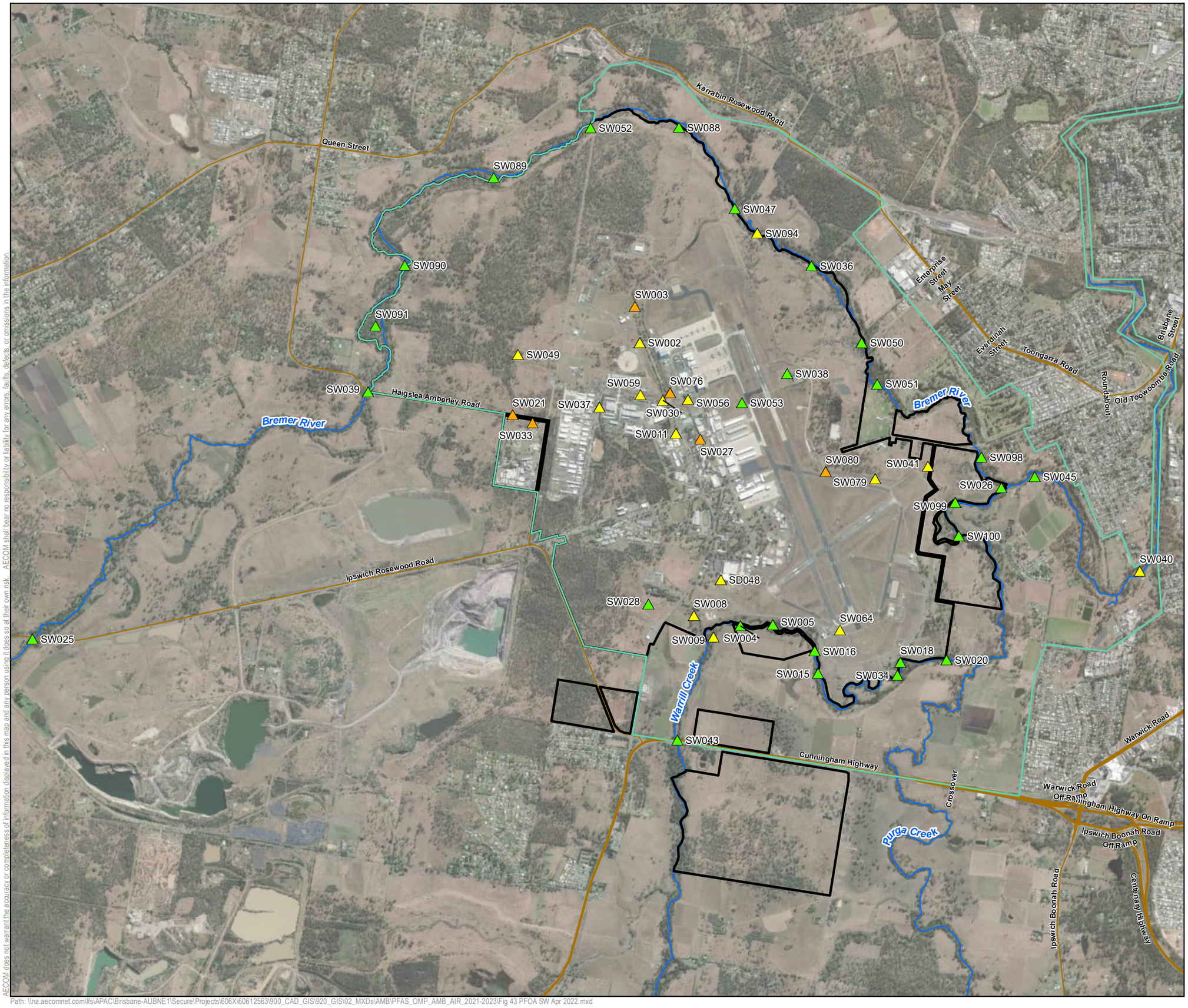
SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE
Figure 42: PFOA Concentrations in Surface Water in October 2021

PROJECT
PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT
DEPARTMENT OF DEFENCE

Path: \\na.aecomnet.com\lfs\APAC\Brisbane-AUBNE1\Secure\Projects\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\AMB\PFAS_OMP_AMB_AIR_2021-2023\Fig 42 PFOA SW Oct2021.mxd



LEGEND

Surface Water Analytical Results: PFOA Concentrations (µg/L)

- >50
- 10-50
- 0.56-10
- LOR-0.56
- <LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area

km
0 0.5 1

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 43: PFOA Concentrations in Surface Water in March/April 2022

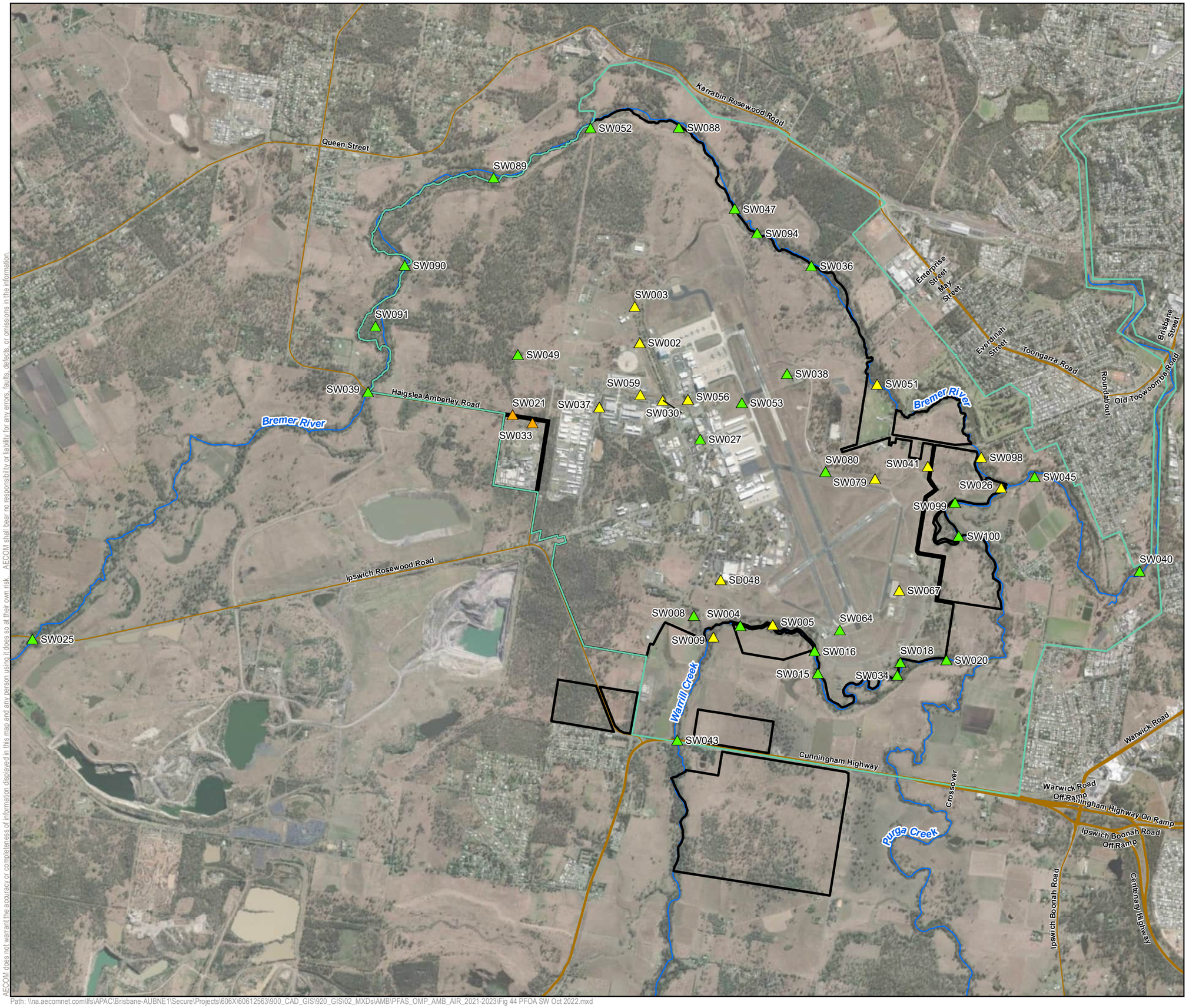
PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

Path: \\na.aecomnet.com\lfs\APAC\Brisbane-AUBNE1\Secure\Projects\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\AMB\PFAS_OMP_AMB_AIR_2021-2023\Fig 43 PFOA SW Apr 2022.mxd



LEGEND

Surface Water Analytical Results: PFOA Concentrations (µg/L)

- >50
- 10-50
- 0.56-10
- LOR-0.56
- <LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area

km
0 0.5 1

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 44: PFOA Concentrations in Surface Water in October / November 2022

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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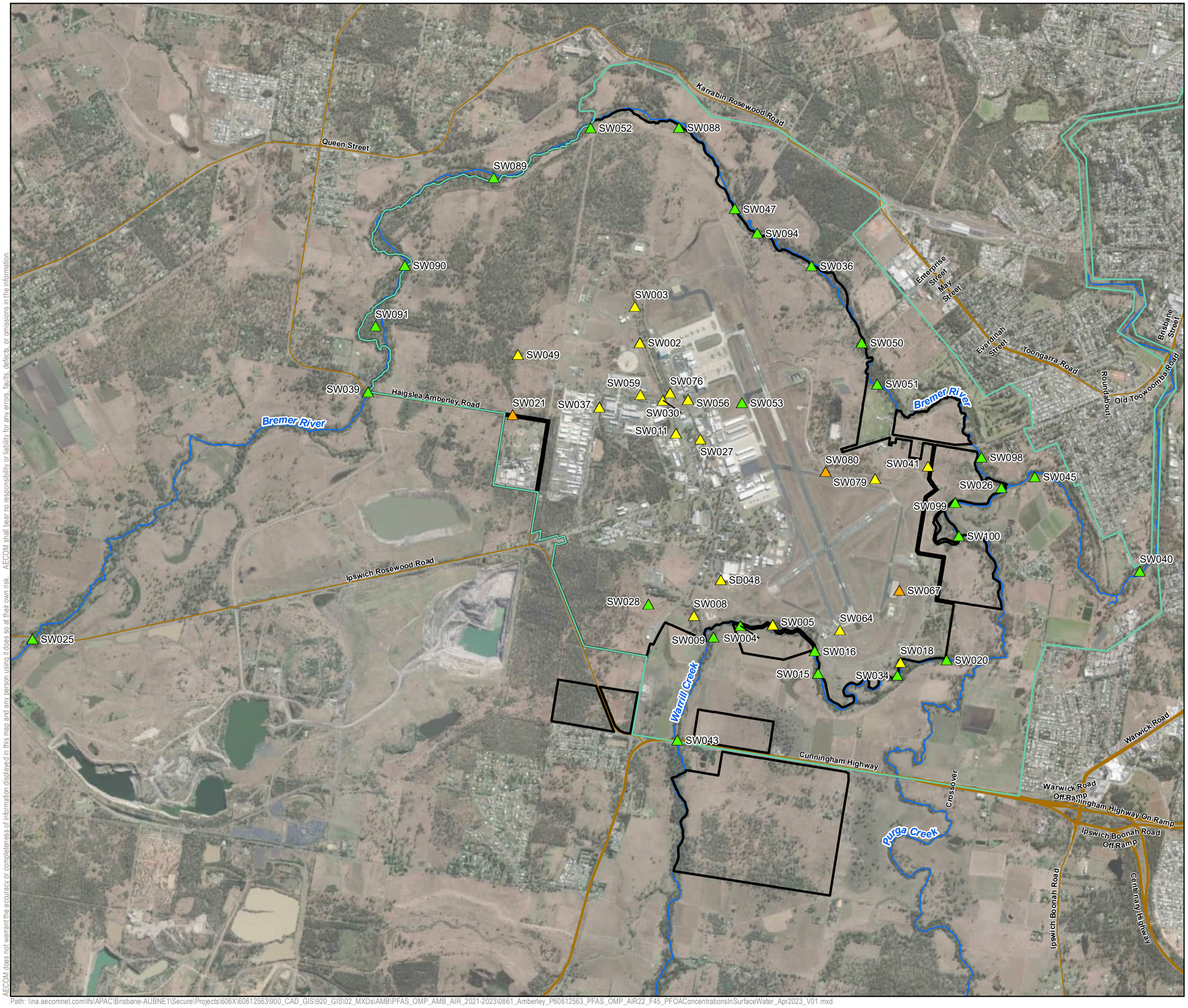

LEGEND

Surface Water Analytical Results: PFOA Concentrations (µg/L)

- >50
- 10-50
- 0.56-10
- LOR-0.56
- <LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area

km
0 0.5 1

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 45: PFOA Concentrations in Surface Water in April/May 2023

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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DEPARTMENT OF DEFENCE

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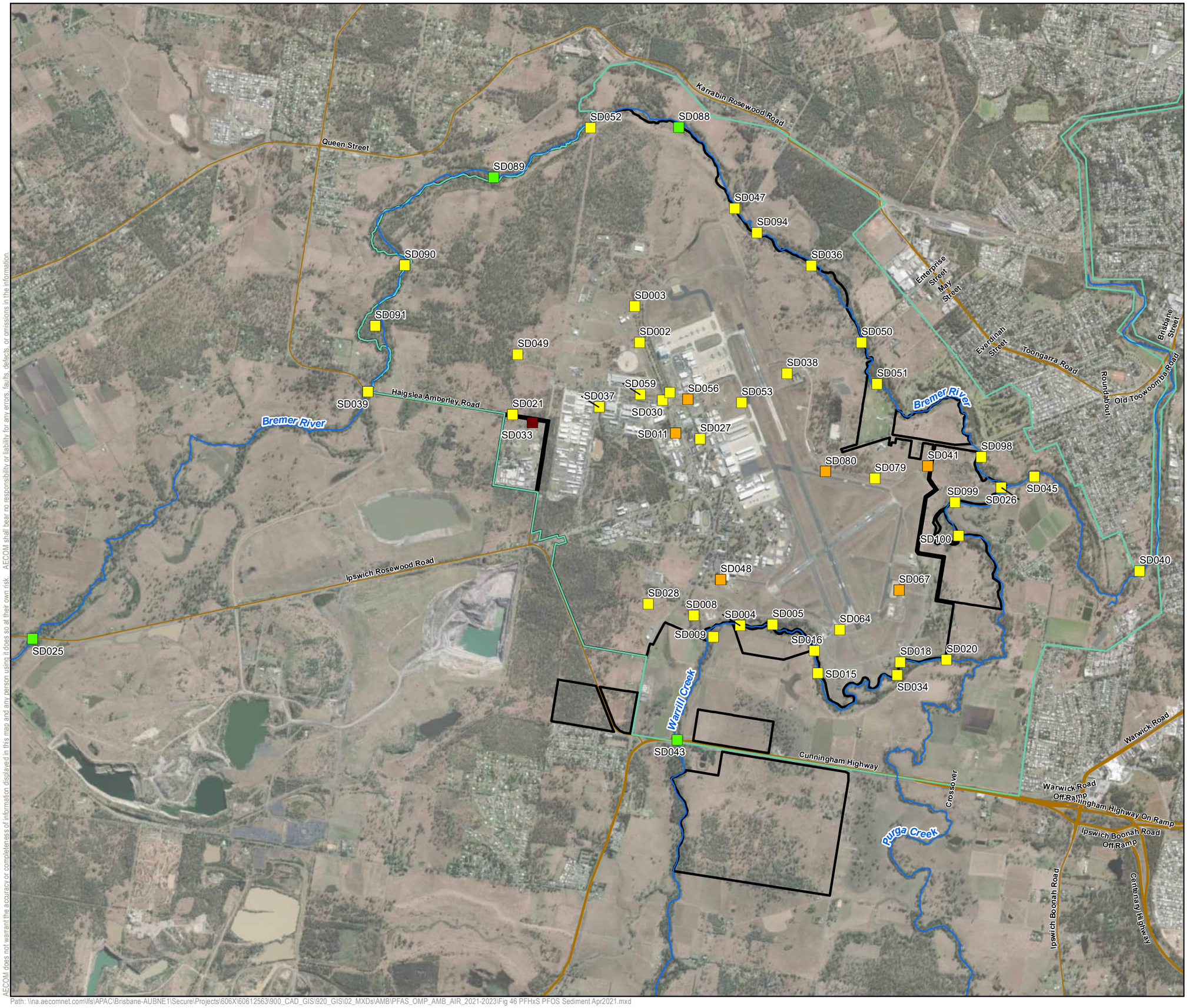


LEGEND

Sediment Analytical Results

PFHxS + PFOS Concentrations (mg/kg)

- >10
- 1 - 10
- 0.3 - 1
- LOR - 0.3
- < LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 46: Sum of PFHxS and PFOS Concentrations in Sediment in March/April 2021

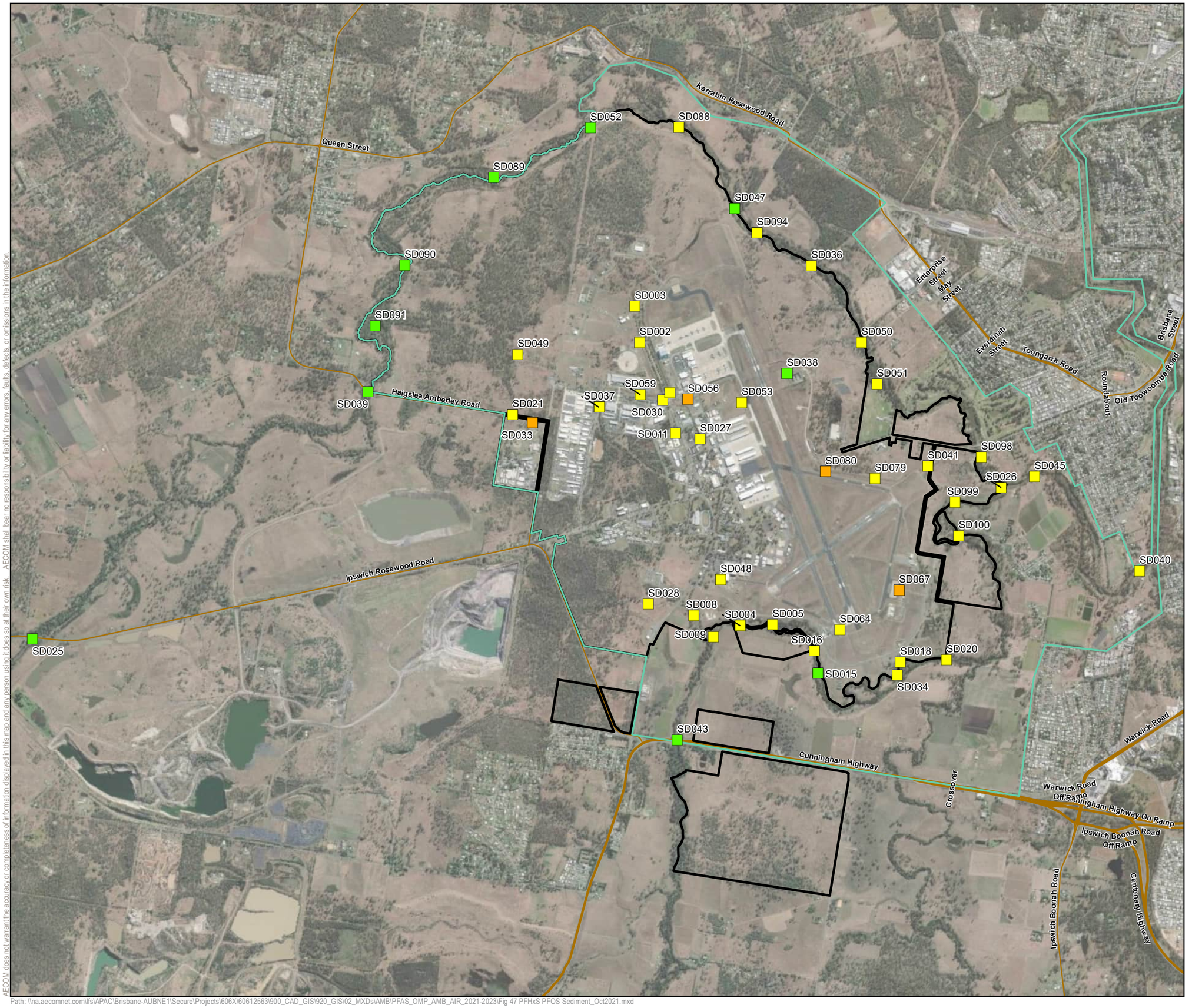
PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

Path: \\na.aecomnet.com\lfs\APAC\Brisbane-AUBNE1\Secure\Projects\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\AMB\PFAS_OMP_AMB_AIR_2021-2023\Fig 46 PFHxS PFOS Sediment Apr2021.mxd



LEGEND

Sediment Analytical Results

PFHxS + PFOS Concentrations(mg/kg)

- >10
- 1 - 10
- 0.3 - 1
- LOR - 0.3
- < LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 47: Sum of PFHxS and PFOS Concentrations in Sediment in October 2021

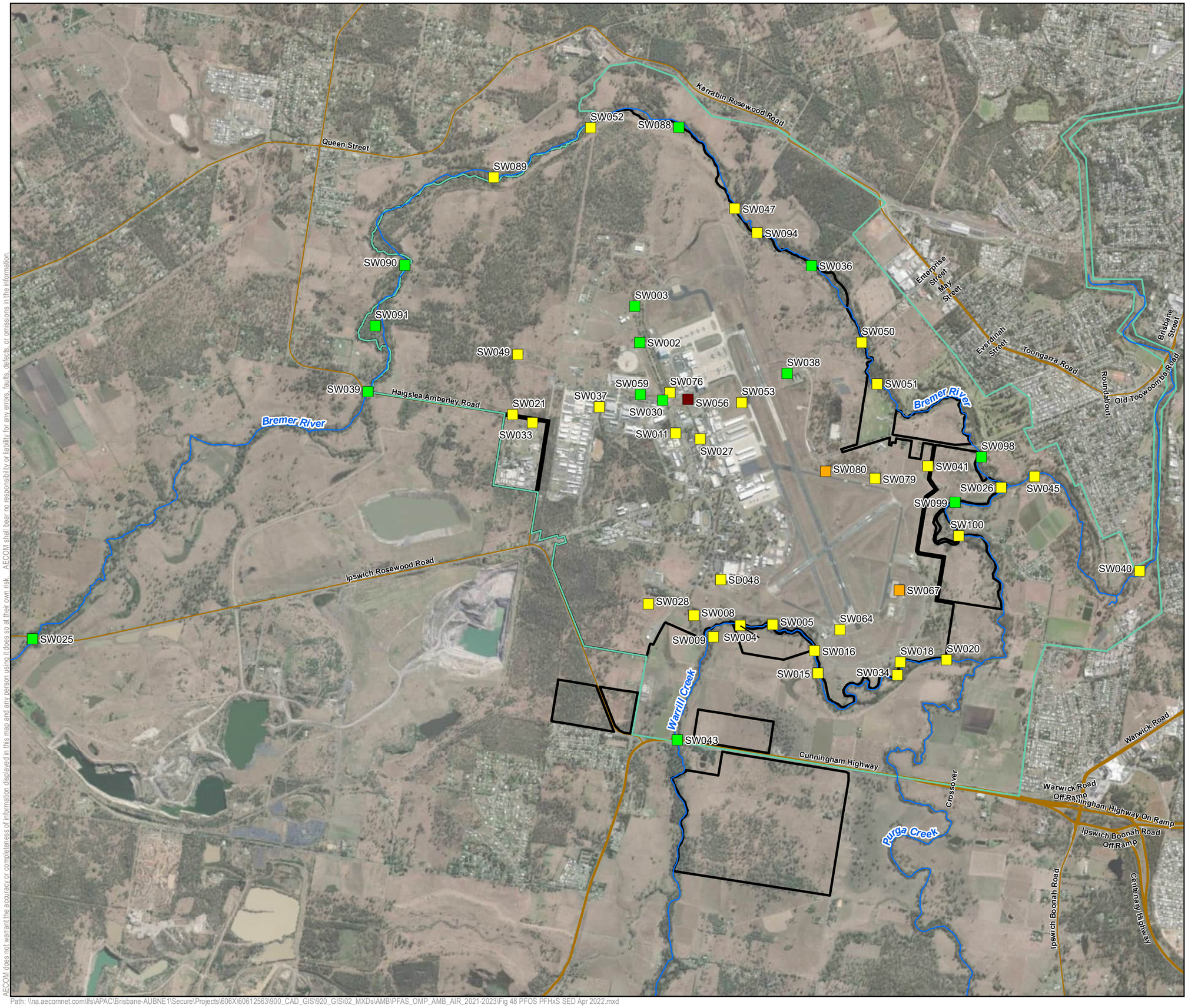
PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

Path: \\na.aecomnet.com\lfs\APAC\Brisbane-AUBNE1\Secure\Projects\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\AMB\PFAS_OMP_AMB_AIR_2021-2023\Fig 47 PFHxS PFOS Sediment_Oct2021.mxd



LEGEND

Sediment Analytical Results

PFHxS + PFOS Concentrations (mg/kg)

- >10
- 1 - 10
- 0.3 - 1
- LOR - 0.3
- < LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE 1:35,000
SIZE A3
SHEET -
COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 48: Sum of PFHxS and PFOS Concentrations in Sediment in March/April 2022

PROJECT
PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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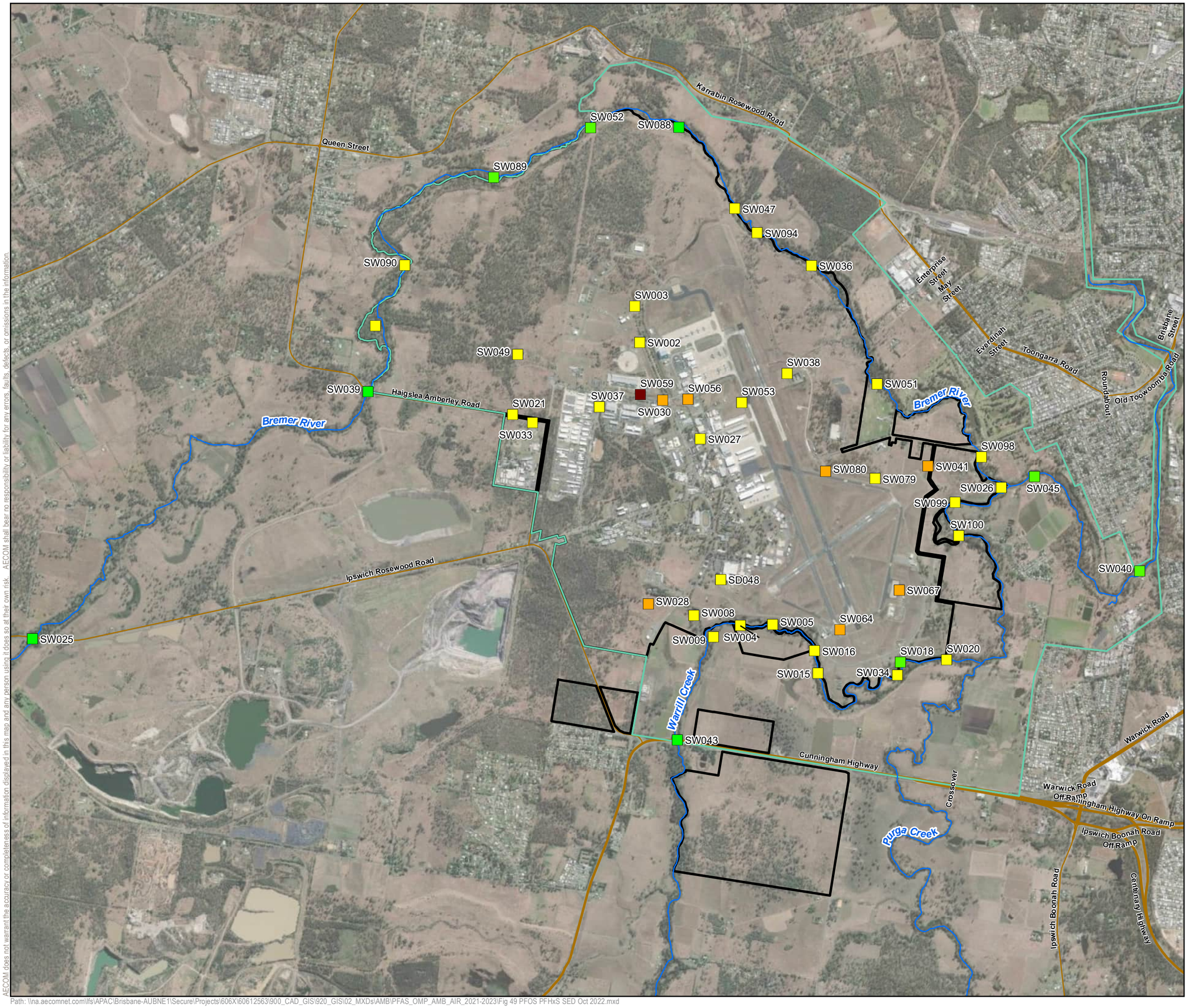

LEGEND

Sediment Analytical Results

PFHxS + PFOS Concentrations (mg/kg)

- >10
- 1 - 10
- 0.3 - 1
- LOR - 0.3
- < LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 49: Sum of PFHxS and PFOS Concentrations in Sediment in October / November 2022

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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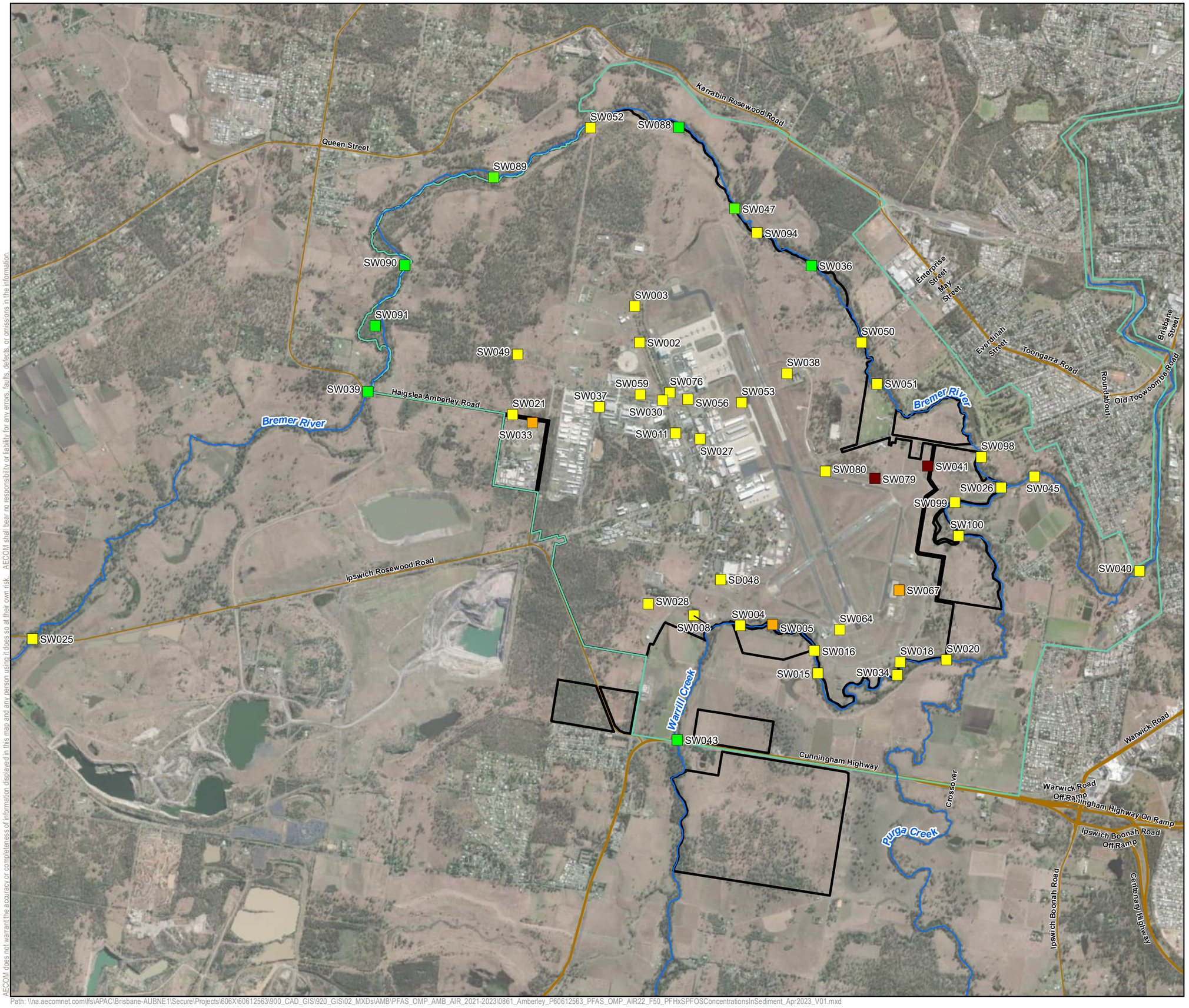

LEGEND

Sediment Analytical Results

PFHxS + PFOS Concentrations (mg/kg)

- >10
- 1 - 10
- 0.3 - 1
- LOR - 0.3
- < LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE	SIZE
1:35,000	A3
SHEET	COORDINATE SYSTEM
-	GDA 1994 MGA Zone 56

TITLE

Figure 50: Sum of PFHxS and PFOS Concentrations in Sediment in April/May 2023

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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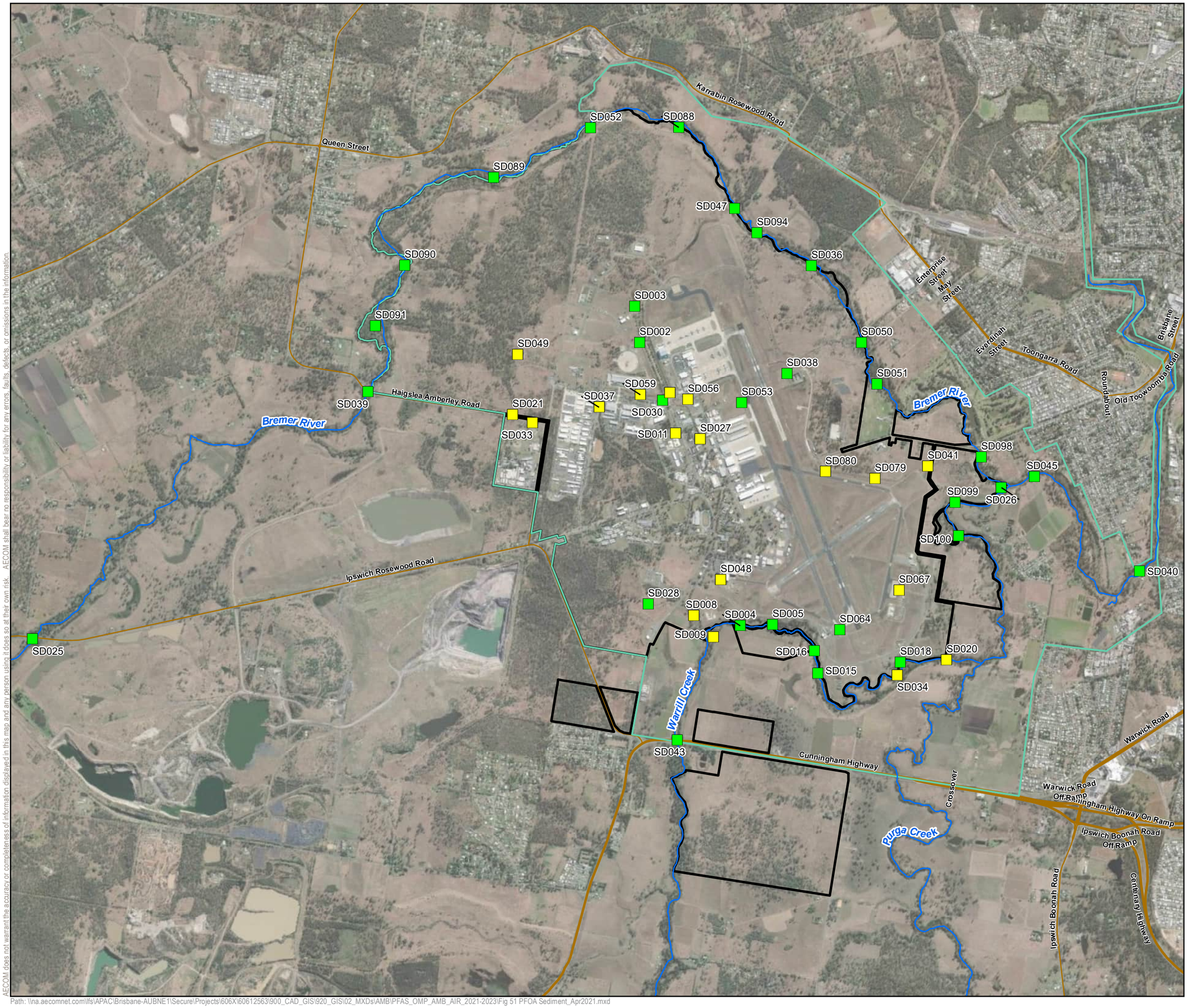


LEGEND

Sediment Analytical Results

PFOA Concentrations (mg/kg)

- >10
- 1 - 10
- 0.3 - 1
- LOR - 0.3
- < LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 51: PFOA Concentrations in Sediment in March/April 2021

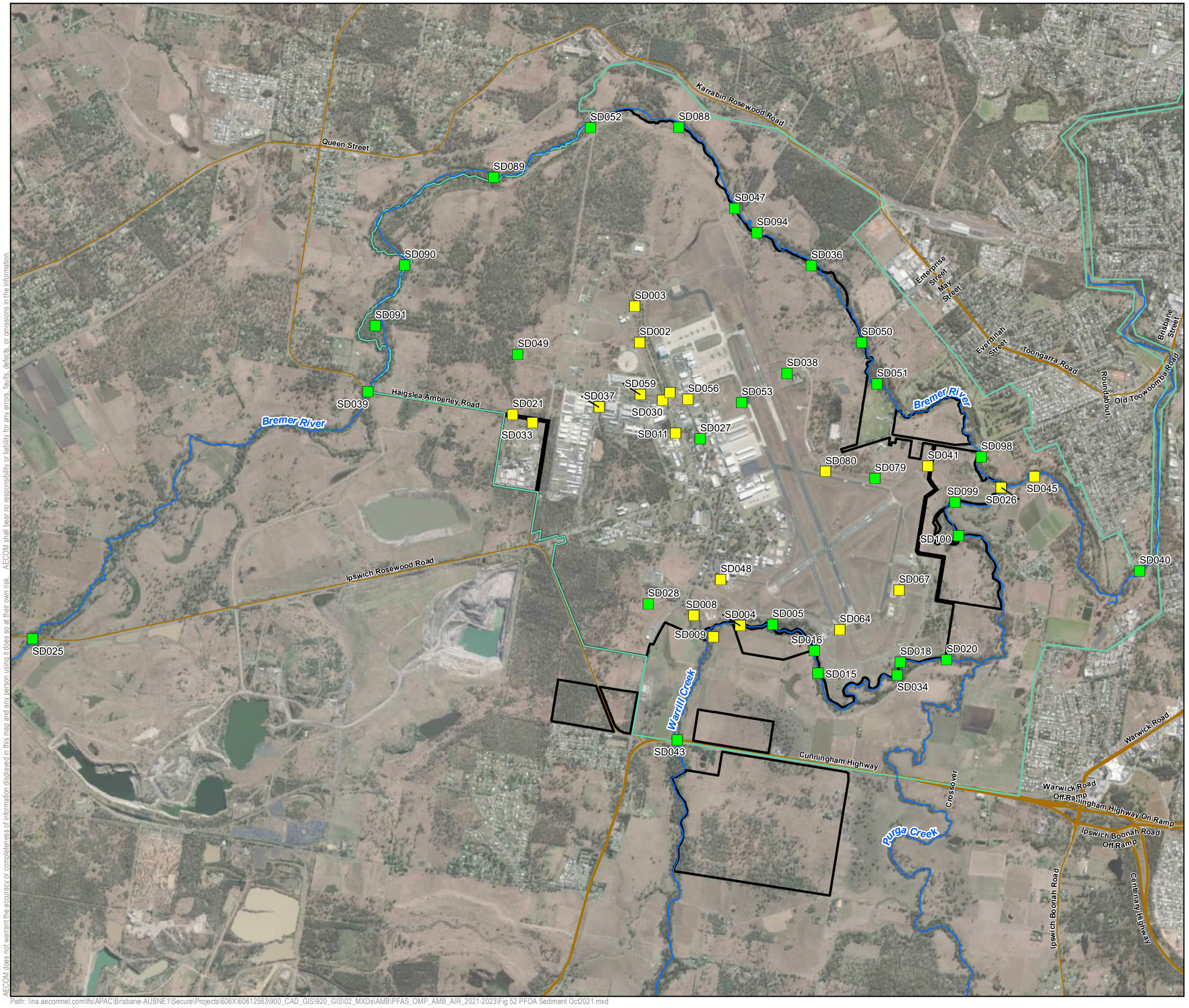
PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

Path: \\na.aecomnet.com\lfs\APAC\Brisbane-AUBNE1\Secure\Projects\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\AMB\PFAS_OMP_AMB_AIR_2021-2023\Fig 51 PFOA Sediment_Apr2021.mxd



LEGEND

Sediment Analytical Results

PFOA Concentrations (mg/kg)

- >10
- 1 - 10
- 0.3 - 1
- LOR - 0.3
- < LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 52: PFOA Concentrations in Sediment in October 2021

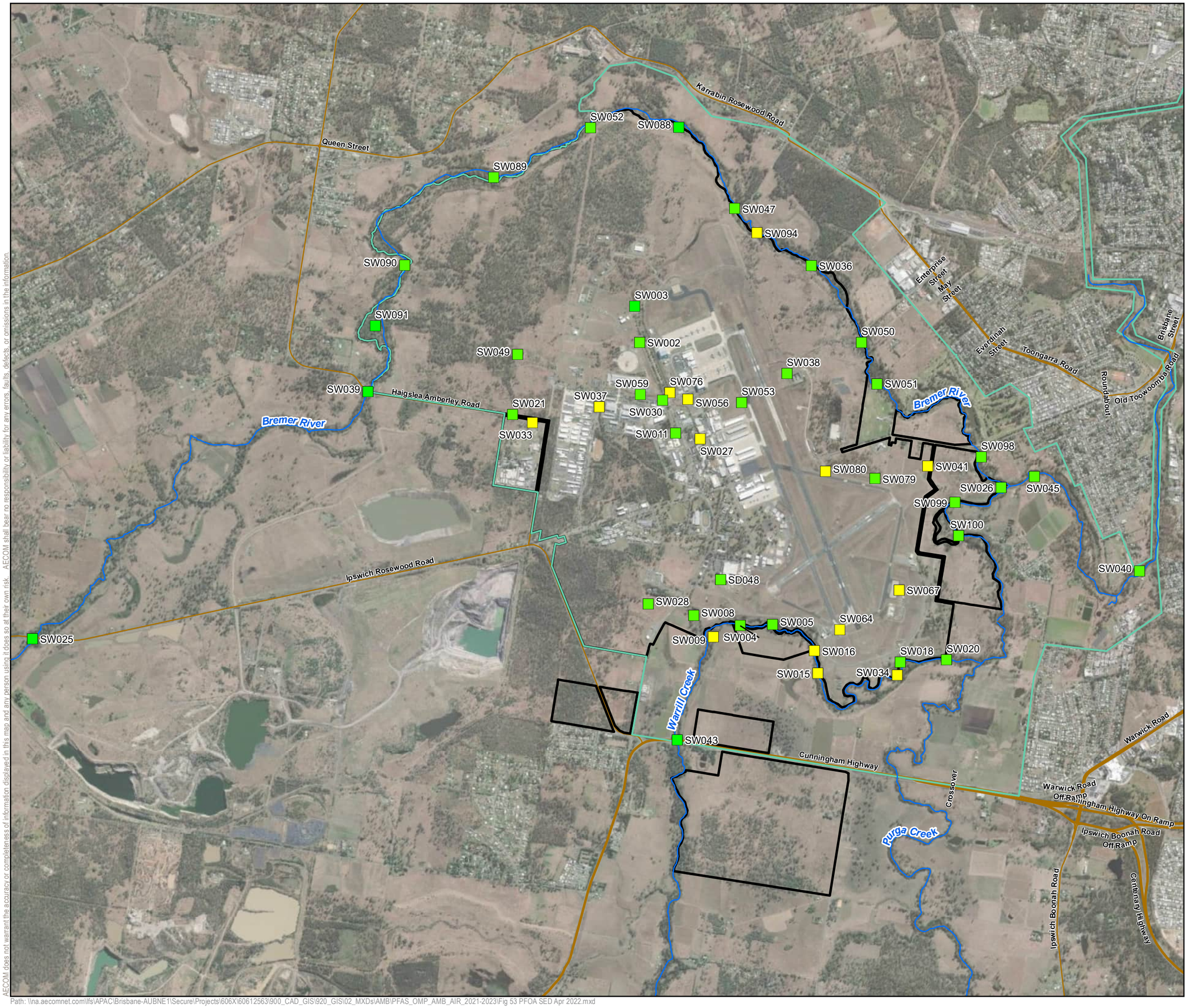
PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

Path: \\na.aecomnet.com\lfs\APAC\Brisbane-AUBNE1\Secure\Projects\606X\60612563\900_CAD_GIS\920_GIS\02_MXDs\AMB\PFAS_OMP_AMB_AIR_2021-2023\Fig 52 PFOA Sediment Oct2021.mxd



LEGEND

Sediment Analytical Results

PFOA Concentrations (mg/kg)

- >10
- 1 - 10
- 0.3 - 1
- LOR - 0.3
- < LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

N

0 0.5 1 km

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 53: PFOA Concentrations in Sediment in March / April 2022

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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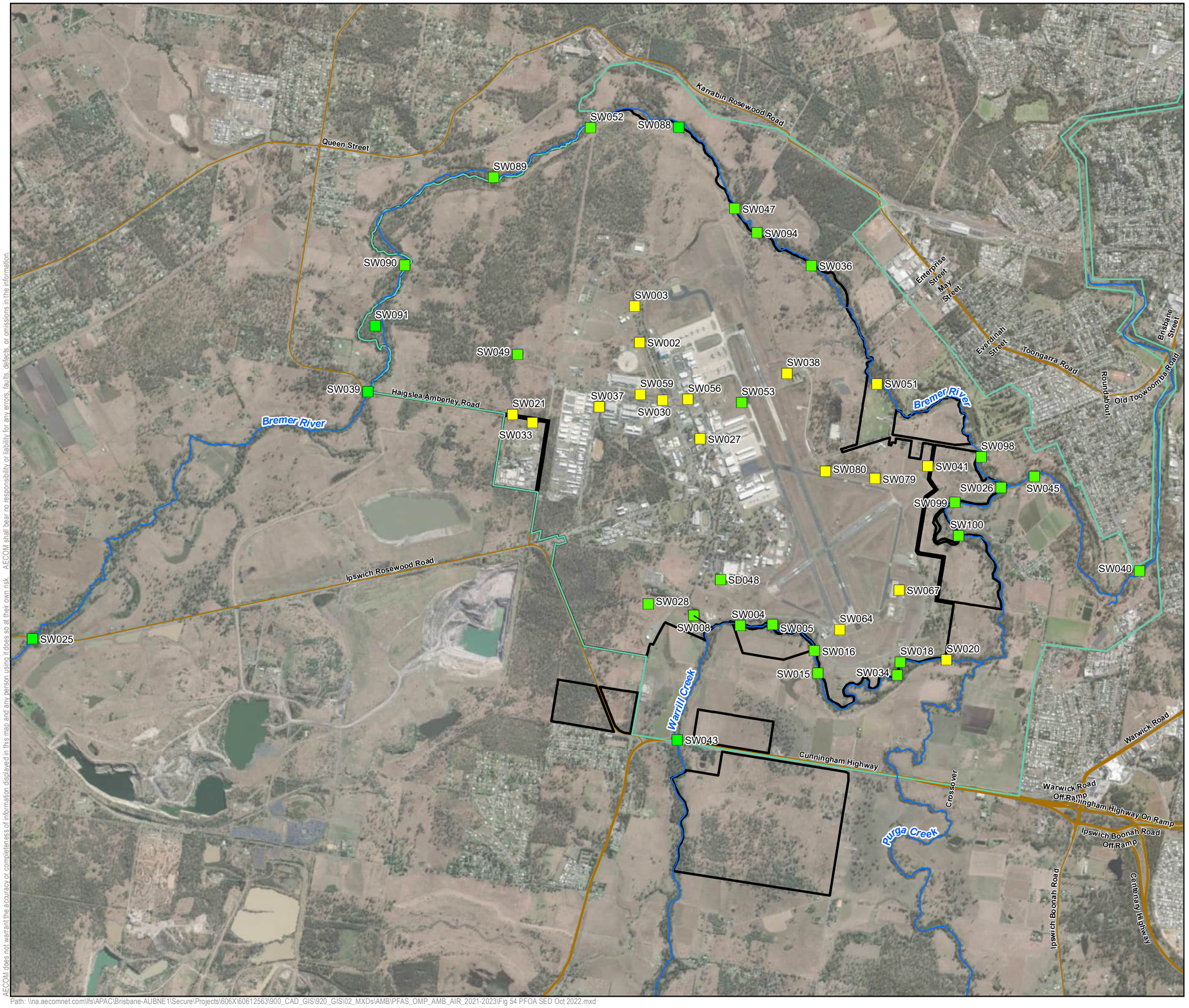

LEGEND

Sediment Analytical Results

PFOA Concentrations (mg/kg)

- >10
- 1 - 10
- 0.3 - 1
- LOR - 0.3
- < LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

0 0.5 1 km

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 54: PFOA Concentrations in Sediment in October / November 2022

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

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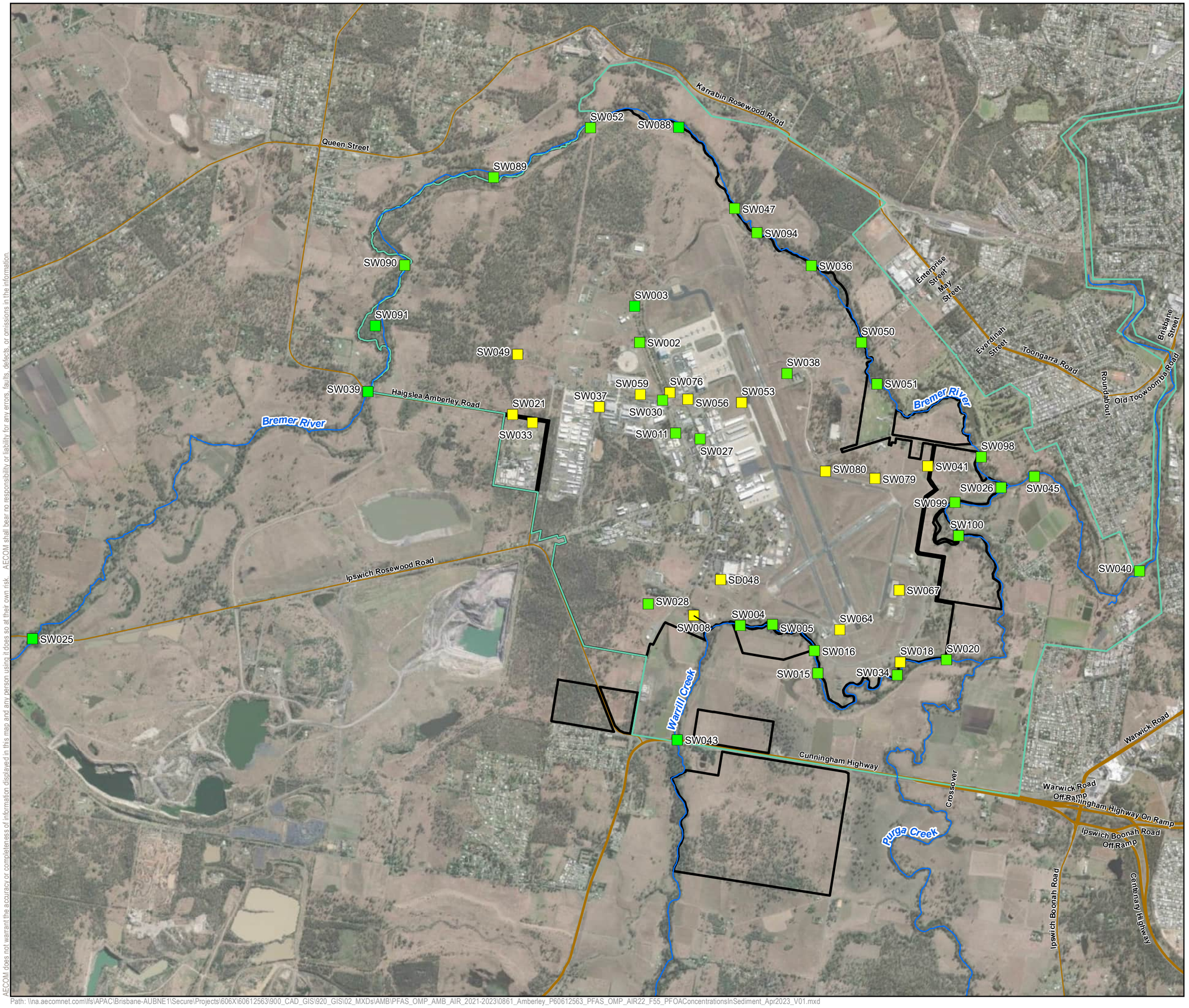

LEGEND

Sediment Analytical Results

PFOA Concentrations (mg/kg)

- >10
- 1 - 10
- 0.3 - 1
- LOR - 0.3
- < LOR
- Freeways/Motorways ; Highways
- Roads
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

km
0 0.5 1

AECOM

SCALE	1:35,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 55: PFOA Concentrations in Sediment in April / May 2023

PROJECT

PFAS OMP RAAF BASE AMBERLEY ONGOING MONITORING REPORT MARCH 2021 TO MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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Appendix B

Tables

Appendix B Tables

Table T1 Groundwater Gauging and Water Quality Parameter Results, April 2020 to May 2023

Property ID	Well ID	Sample Date	Aquifer	Screen depth (m)	Well Depth (mbtoc)	Depth to Water (mbtoc)	TOC Elevation (mAHD)	Ground-water Elevation (mAHD)	Condition of Well	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)	Temp (°C)	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
0861	MW002	21/04/2020	Walloon Coal Measures	16.7-23.7	24.27	17.605	Unknown	Unknown	Good	6.53	13814	6.79	202.6	24.4	Clear	Clear	Sulfuric odour	No sheen	Hydrasleeve™
0861	MW002	13/10/2020	Walloon Coal Measures	16.7-23.7	-	-	Unknown	Unknown	Good	0.72	12167	6.39	-3.5	23.5	Turbid	Light brown	No odour	No sheen	Bailer, parameters only
0861	MW002	21/04/2021	Walloon Coal Measures	16.7-23.7	24.14	19.604	Unknown	Unknown	Good	1.42	14186	6.62	188.3	22.5	Low	Brown	No odour	No sheen	Hydrasleeve™
0861	MW002	21/10/2021	Walloon Coal Measures	16.7-23.7	24.12	17.61	Unknown	Unknown	Good	0.41	15203	6.55	280.9	23	Low	Grey	No odour	No sheen	Hydrasleeve™
0861	MW002	31/03/2022	Walloon Coal Measures	16.7-23.7	24.08	17.5	Unknown	Unknown	Good	0.72	13559	6.47	-29.5	175.5	23.3	Light grey	Sulfuric odour	No sheen	Hydrasleeve™
0861	MW002	26/10/2022	Walloon Coal Measures	16.7-23.7	24.34	17.38	Unknown	Unknown	Good	1.21	16243	5.8	161.3	23.4		Clear	No odour	No sheen	Hydrasleeve™
0861	MW002	22/05/2023	Walloon Coal Measures	16.7-23.7	22.985	18.367	Unknown	Unknown	Good	1.9	15277	6.3	264.4	24.2		Cloudy, medium turbidity	No odour	No sheen	HydraSleeve™
0861	MW005	23/04/2020	Alluvium	13.0-17.0	18	15.42	26.725	11.305	Good	0.46	2324	7.83	68.3	21.6	Clear	Clear	Sulfuric odour	No sheen	Hydrasleeve™
0861	MW005	16/10/2020	Alluvium	13.0-17.0	17.81	15.557	26.725	11.168	Good	0.83	2554	7.7	-29.3	23.9	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW005	21/04/2021	Alluvium	13.0-17.0	18.00	15.604	26.725	11.121	Good	0.46	2374	6.74	188.6	24.5	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW005	27/10/2021	Alluvium	13.0-17.0	17.82	15.62	26.725	11.105	Good	0.48	2455	7.03	288.4	24.2	Clear	Light yellow	No odour	No sheen	Hydrasleeve™
0861	MW005	06/04/2022	Alluvium	13.0-17.0	17.78	15.33	26.725	11.395	Good	0.57	2129	6.87	4.0	209	22.5	Clear	No odour	No sheen	Hydrasleeve™
0861	MW005	24/10/2022	Alluvium	13.0-17.0	17.83	15.012	26.725	11.713	Good	0.93	2612	6.12	121.9	23.8		Clear	No odour	No sheen	Hydrasleeve™
0861	MW005	21/04/2023	Alluvium	13.0-17.0	17.8	14.984	26.725	11.741	Good	1.2	983	6.77	291.2	23		Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW006	22/04/2020	Alluvium	10.3-14.3	13.355	10.298	21.937	11.639	Good	1.88	1393	8.36	189.2	25.2	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW006	21/10/2020	Alluvium	10.3-14.3	13.36	10.409	21.937	11.528	Good	1.22	1202	8.26	-33.6	23	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW006	19/04/2021	Alluvium	10.3-14.3	13.34	10.416	21.937	11.521	Good	1.09	1390	7.98	275	25	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW006	27/10/2021	Alluvium	10.3-14.3	10.42	13.33	21.937	8.607	Good	1.83	1449	7.71	362.4	22.3	Low	Light grey	No odour	No sheen	Hydrasleeve™
0861	MW006	07/04/2022	Alluvium	10.3-14.3	13.27	10.115	21.937	11.822	Good	1.74	1338	7.66	62.9	267.9	21	Clear	No odour	No sheen	Hydrasleeve™
0861	MW006	26/10/2022	Alluvium	10.3-14.3	13.31	9.88	21.937	12.057	Good	2.14	1742	7.17	165.5	22.8		Clear	No odour	No sheen	Hydrasleeve™
0861	MW006	26/04/2023	Alluvium	10.3-14.3	13.312	9.89	21.937	12.047	Good	2.14	1501	7.38	368.7	19.9		Pale brown, low turbidity	No odour	No sheen	HydraSleeve™
0861	MW007	28/04/2020	Alluvium	6.0-10.0	10.78	8.17	23.208	15.038	Good	0.51	3212	8.16	274.6	23.2	Low	Light yellow	No odour	No sheen	Hydrasleeve™
0861	MW007	19/10/2020	Alluvium	6.0-10.0	10.66	8.261	23.208	14.947	Good	0.81	3076	7.66	55.3	25.7	Medium	Light brown	No odour	No sheen	Hydrasleeve™
0861	MW007	19/04/2021	Alluvium	6.0-10.0	10.70	8.299	23.208	14.909	Good	1.07	4143	7.34	383.7	25.7	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW007	27/10/2021	Alluvium	6.0-10.0	10.7	8.27	23.208	12.508	Good	1.32	4129	7.39	349.5	24.5	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW007	06/04/2022	Alluvium	6.0-10.0	10.78	7.98	23.208	15.228	Good	0.43	927	7.8	-118.8	86.2	23	Clear	No odour	No sheen	Hydrasleeve™
0861	MW007	26/10/2022	Alluvium	6.0-10.0	10.74	7.804	23.208	15.404	Good	1.23	4054	7.01	190.2	23.9		Clear	No odour	No sheen	Hydrasleeve™
0861	MW007	21/04/2023	Alluvium	6.0-10.0	10.755	7.865	23.208	15.343	Good	0.93	864	6.59	300.5	21.8		Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW008	-	Alluvium		-	-	-	-	Damaged	-	-	-	-	-	-	-	-	-	Hydrasleeve™
0861	MW008	-	Alluvium		-	-	-	-	Damaged	-	-	-	-	-	-	-	-	-	Hydrasleeve™
0861	MW008		Alluvium		-	9.8	25.22	15.42	Damaged	-	-	-	-	-	-	-	-	-	Hydrasleeve™
0861	MW009	-	Alluvium		-	-	-	-	Damaged	-	-	-	-	-	-	-	-	-	Hydrasleeve™
0861	MW009	-	Alluvium		-	-	-	-	Damaged	-	-	-	-	-	-	-	-	-	Hydrasleeve™
0861	MW009	-	Alluvium		-	-	-	-	Damaged	-	-	-	-	-	-	-	-	-	Hydrasleeve™
0861	MW012	27/04/2020	Tertiary Formation	12.5-17.5	16.55	9.435	26.175	16.74	Good	0.33	13769	6.8	77.3	25.1	Medium	Grey	No odour	No sheen	Hydrasleeve™
0861	MW012	13/10/2020	Tertiary Formation	12.5-17.5	16.24	9.462	26.175	16.713	Good	1.19	12469	7.1	-68.9	24.7	Clear	Clear	Slight organic odour	No sheen	Hydrasleeve™
0861	MW012	20/04/2021	Tertiary Formation	12.5-17.5	16.26	9.498	26.175	16.677	Good	0.4	14940	6.71	274.7	25.5	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW012	27/10/2021	Tertiary Formation	12.5-17.5	16.18	9.445	26.175	16.73	Good	0.79	14808	6.78	307.2	29.3	Clear	Light yellow	No odour	No sheen	Hydrasleeve™
0861	MW012	06/04/2022	Tertiary Formation	12.5-17.5	16.1	9.42	26.175	16.755	Good	0.39	12977	6.52	-37.1	167.9	25.2	Clear	No odour	No sheen	Hydrasleeve™
0861	MW012	24/10/2022	Tertiary Formation	12.5-17.5	16.04	9.262	26.175	16.913	Good	1.39	15400	6.2	145.9	28.8		Clear	No odour	No sheen	Hydrasleeve™
0861	MW012	20/04/2023	Tertiary Formation	12.5-17.5	16.07	9.204	26.175	16.971	Good	0.93	990	6.6	294.2	23.2		Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW015	-	Tertiary Formation		-	-	-	-	Destroyed	-	-	-	-	-	-	-	-	-	Hydrasleeve™
0861	MW015	-	Tertiary Formation		-	-	-	-	Damaged	-	-	-	-	-	-	-	-	-	Hydrasleeve™
0861	MW015	-	Tertiary Formation		-	-	-	-	Destroyed	-	-	-	-	-	-	-	-	-	Hydrasleeve™
0861	MW020	27/04/2020	Tertiary Formation	23.5-16.5	15.5	9.34	27.043	17.703	Good	0.5	15586	6.66	39.5	24.6	Medium	Grey	Sulfuric odour	No sheen	Hydrasleeve™
0861	MW020	13/10/2020	Tertiary Formation	23.5-16.5	16.3	9.394	27.043	17.649	Good	0.17	13355	6.94	-65.4	24.7	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW020	20/04/2021	Tertiary Formation	23.5-16.5	16.26	9.445	27.043	17.598	Good	0.3	15879	6.74	175	25.4	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW020	27/10/2021	Tertiary Formation	23.5-16.5	15.37	9.45	27.043	17.593	Good	0.64	16616	6.68	321.7	28.4	Low	Light yellow	No odour	No sheen	Hydrasleeve™
0861	MW020	06/04/2022	Tertiary Formation	23.5-16.5	16.2	9.435	27.043	17.608	Good	0.49	11206	6.41	-6.9	198.1	25.6	Clear	No odour	No sheen	Hydrasleeve™
0861	MW020	25/10/2022	Tertiary Formation	23.5-16.5	16.62	9.32	27.043	17.723	Good	1.44	7890	6.49	173.9	25.5		Clear	No odour	No sheen	Hydrasleeve™
0861	MW020	21/04/2023	Tertiary Formation	23.5-16.5	16.215	9.144	27.043	17.899	Good	1.01	832	6.9	289	24.0		Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW021	29/04/2020	Alluvium	2.5-6.0	5.6	3.745	20.72	16.975	Damaged	0.76	915	7.46	80.6	20.8	Low	Clear	Organic odour	No sheen	Hydrasleeve™
0861	MW021	14/10/2020	Alluvium	2.5-6.0	5.63	4.107	20.72	16.613	Damaged	0.64	752	8.27	-61.5	20.7	Turbid	Grey	No odour	No sheen	Hydrasleeve™
0861	MW021	19/04/2021	Alluvium	2.5-6.0	5.52	3.745	20.72	16.975	Damaged	0.75	1104	7.55	332.2	23.2	Medium	Yellow / brown	No odour	No sheen	Hydrasleeve™
0861	MW021	28/10/2021	Alluvium	2.5-6.0	5.69	3.84	20.72	16.88	Damaged	0.56	1053	7.27	342	23	Low	Light grey	No odour	No sheen	Hydrasleeve™
0861	MW021	30/03/2022	Alluvium	2.5-6.0	5.67	2.995	20.72	17.725	Good	0.62	978	7.3	-100.2	104.8	24.1	Clear	No odour	No sheen	Hydrasleeve™
0861	MW021	26/10/2022	Alluvium	2.5-6.0	5.62	2.523	20.72	18.197	Good	1.45	1533	6.64	255	22.3		Clear	No odour	No sheen	Hydrasleeve™
0861	MW021	28/04/2023	Alluvium	2.5-6.0	5.715	2.285	20.72	18.435	Good	3.8	485	7.03	220.5	23.2		Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW022	21/04/2020	Alluvium	4.0-9.0	9.8	6.88	19.65	12.77	Good	0.36	1528	7.31	175	20.5	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW022	12/10/2020	Alluvium	4.0-9.0	9.97	7.13	19.65	12.52	Good	0.37	1490	6.71	57.9	22.8	Medium	Grey	No odour	No sheen	Hydrasleeve™
0861	MW022	12/04/2021	Alluvium	4.0-9.0	9.78	6.964	19.65	12.686	Good	0.4	1346	6.66	240.9	21.7	Clear	Clear	Slight organic odour	No sheen	Hydrasleeve™
0861	MW022	21/10/2021	Alluvium	4.0-9.0	9.74	7.022	19.65	12.628	Good	1.01	1735	6.85	307	21.6	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW022	30/03/2022	Alluvium	4.0-9.0	9.705	6.254	19.65	13.396	Good	0.48	682	6.85	-92.4	112.6	23	Light yellow / brown	No odour	No sheen	Hydrasleeve™
0861	MW022	09/11/2022	Alluvium	4.0-9.0	9.71	6.067	19.65	13.583	Good	4.3	523.5	7.05	214.9	22.1		Clear	No odour	No sheen	Hydrasleeve™
0861	MW022	28/04/2023	Alluvium	4.0-9.0	9.70	6.252	19.65	13.398	Good	0.66	1036	6.53	227.6	23.1		Light brown, slightly turbid	No odour	No sheen	HydraSleeve™
0861	MW023	22/04/2020	Alluvium	7.8-11.8	12.84	9.325	20.51	11.185	Good	0.5	8368	7.51	229.1	23.5	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW023	21/10/2020	Alluvium	7.8-11.8	12.85	9.445	20.51	11.065	Good	0.15	7634	7.14	-112.2	22.6	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW023	21/04/2021	Alluvium	7.8-11.8	12.86	9.42	20.51	11.09	Good	0.42	9638	6.92	317.5	24.7	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW023	27/10/2021	Alluvium	7.8-11.8	12.86	9.435	20.51	11.075	Good	0.81	9645	6.98	375.8	24.8	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW023	07/04/2022	Alluvium	7.8-11.8	12.81	8.99	20.51	11.52	Good	0.43	494.1	7.5	54.9	259.9	21.6	Clear	No odour	No sheen	Hydrasleeve™
0861	MW023	26/10/2022	Alluvium	7.8-11.8	12.87	8.788	20.51	11.722	Good	1.28	3654	6.46	182.8	23		Clear	No odour	No sheen	Hydrasleeve™
0861	MW023	26/04/2023	Alluvium	7.8-11.8	12.87	8.903	20.51	11.607	Good	-	4707	6.89	282.4	23.6		Pale brown, low turbidity	No odour	No sheen	HydraSleeve™
0861	MW024	15/10/2020	Alluvium	7.0-11.0	11.93	8.643	20.95	12.307	Good	0.54	2857	7.26	74.3	21.5	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW024	20/04/2021	Alluvium	7.0-11.0	11.96	8.005	20.95	12.945	Good	0.24	3543	7.15	356.7	19.9	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW024	21/10/2021	Alluvium	7.0-11.0	11.91	7.75	20.95	13.2	Good	1.17	3814	7.33	287.7	21.9	Low	Light yellow	No odour	No sheen	Hydrasleeve™
0861	MW024	04/04/2022	Alluvium	7.0-11.0	11.93	6.738	20.95	14.212	Good	0.81	2687	7.09	92.7	297.7	22.4	Clear	No odour	No sheen	Hydrasleeve™
0861	MW024	26/10/2022	Alluvium	7.0-11.0	11.94	6.979	20.95	13.971	Good	1.64	3921	6.93	181.7	22		Clear	No odour	No sheen	Hydrasleeve™
0861	MW024	28/04/2023	Alluvium	7.0-11.0	11.91	7.455	20.95	13.495	Good	2.07	3140	7.25	199.1	21		Clear, non-turbid	No odour	No sheen	Bailer
0861	MW025	27/04/2020	Alluvium	7.4-11.4	12.27	9.889	25.42	15.531	Good	0.47	1911	7.35	118.2	24.4	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW025	14/10/2020	Alluvium	7.4-11.4	12.19	10.243	25.42	15.177	Good	1.47	1722	7.94	-21.5	20.8	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW025	16/04/2021	Alluvium	7.4-11.4	12.03	9.524	25.42	15.896	Good	2.43	1828	7.65	286.1	23.5	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW025	27/10/2021	Alluvium	7.4-11.4	12.25	9.775	25.42	15.645	Good	0.75	1960	7.37	328.4	24	Clear	-	No odour	No sheen	Hydrasleeve™
0861	MW025	06/04/2022	Alluvium	7.4-11.4	12.2	8.715	25.42	16.705	Good	0.62	1347	7.27	-58.9	146.1	23.5	Clear	No odour	No sheen	Hydrasleeve™
0861	MW025	24/10/2022	Alluvium	7.4-11.4	12.47	8.795	25.42	16.625	Good	2.62	1225	7.55	136.3	25.8		Clear	No odour	No sheen	Hydrasleeve™
0861	MW025	20/04/2023	Alluvium	7.4-11.4	9.072	12.225	25.42	13.195	Good	0.55	1261	7.27	284.2	23.5		Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW026	28/04/2020	Tertiary Formation	14.5-17.5	17.8	11.385	40.24	28.855	Good	3.69	21902	6.51	224.2	17.8	Turbid	Brown	No odour	No sheen	Hydrasleeve™
0861	MW026	16/10/2020	Tertiary Formation	14.5-17.5	17.53	11.483	40.24	28.757	Good	0.69	22328	7.04	-25.5	25.1	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW026	20/04/2021	Tertiary Formation	14.5-17.5	17.51	11.514	40.24	28.726	Good	0.33	26338	6.54	226.6	23.2	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW026	27/10/2021	Tertiary Formation	14.5-17.5	17.46	11.435	40.24	28.805	Good	0.48	26620	6.73	304.1	26.1	Clear	-	No odour	No sheen	Hydrasleeve™
0861	MW026	06/04/2022	Tertiary Formation	14.5-17.5	17.37	11.445	40.24	28.795	Good	0.67	23494	6.48	-20.8	184.2	24.4	Light yellow / brown	No odour	No sheen	Hydrasleeve™
0861	MW026	24/10/2022	Tertiary Formation	14.5-17.5	17.53	11.264	40.24	28.976	Good	3.98	27834	6.22	135.9	25.6		Clear	No odour	No sheen	Hydrasleeve™
0861	MW026	20/04/2023	Tertiary Formation	14.5-17.5	17.205	11.243	40.24	28.997	Good	0.72	1645	5.85	330.2	24.3		Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW028	22/04/2020	Alluvium	10.5-14.5	13.905	10.43	20.83	10.4	Good	0.3	7639	7.47	234.5	23.5	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW028	15/10/2020	Alluvium	10.5-14.5	13.97	10.601	20.83	10.229	Good	0.35	6754	7	45.4	22.3	Medium	Clear	No odour	No sheen	Hydrasleeve™
0861	MW028	16/04/2021	Alluvium	10.5-14.5	13.79	10.346	20.83	10.484	Good	0.68	7166	7.25	338.6	23.1	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW028	21/10/2021	Alluvium	10.5-14.5	13.92	10.405	20.83	10.425	Good	0.52	7903	7.12	341.8	23	Low	Light yellow	No odour	No sheen	Hydrasleeve™
0861	MW028	04/04/2022	Alluvium	10.5-14.5	13.9	9.507	20.83	11.323	Good	0.73	1565	7.13	-13.2	191.8	23.7	Clear	No odour	No sheen	Hydrasleeve™
0861	MW028	26/10/2022	Alluvium	10.5-14.5	13.9	9.64	20.83	11.19	Good	0.91	6378	6.57	196.1	22.7		Clear	No odour	No sheen	Hydrasleeve™
0861	MW028	20/04/2023	Alluvium	10.5-14.5	13.91	9.888	20.83	10.942	Good	0.5	821	6.49	296.6	20.1		Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW029	22/04/2020	Alluvium	7.0-10.0	11.115	9.332	18.23	8.898	Good	2.31	5120	7.67	229.3	23	Medium	Other	No odour	No sheen	Hydrasleeve™
0861	MW029	15/10/2020	Alluvium	7.0-10.0	11.135	9.585	18.23	8.645	Good	2.72	4499	7.29	99.6	23.4	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW029	16/04/2021	Alluvium	7.0-10.0	11.21	8.995	18.23	9.235	Good	1.52	5474	7.32	335.6	23.7	Low	Light brown	No odour	No sheen	Hydrasleeve™
0861	MW029	21/10/2021	Alluvium	7.0-10.0	11.12	9.235	18.23	8.995	Good	1.92	5762	7.17	328	23	Clear	Light yellow	No odour	No sheen	Hydrasleeve™
0861	MW029	04/04/2022	Alluvium	7.0-10.0	11.09	7.548	18.23	10.682	Good	1.4	4943	6.93	49.9	254.9	23.7	Clear	No odour	No sheen	Hydrasleeve™
0861	MW029	26/10/2022	Alluvium	7.0-10.0	11.1	8.463	18.23	9.767	Good	3.21	6038	6.71	214.4	22.3		Clear	No odour	No sheen	Hydrasleeve™
0861	MW029	20/04/2023	Alluvium	7.0-10.0	11.025	8.942	18.23	9.288	Good	0.48	620	6.84	298.3	21		Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW030	22/04/2020	Walloon Coal Measures	17.0-21.0	21.905	17.431	35.84	18.409	Good	0.27	19040	6.93	253.7	21.3	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW030	13/10/2020	Walloon Coal Measures	17.0-21.0	21.85	17.003	35.84	18.837	Good	0.58	17915	6.87	88.1	22.6	Medium	Clear	No odour	No sheen	Hydrasleeve™
0861	MW030	13/04/2021	Walloon Coal Measures	17.0-21.0	20.77	17.712	35.84	18.128	Good	1.45	21874	6.474	265.7	23.8	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW030	21/10/2021	Walloon Coal Measures	17.0-21.0	21.83	17.356	35.84	18.484	Good	0.6	22594	6.71	321.2	24.6	Low	Light yellow	No odour	No sheen	Hydrasleeve™
0861	MW030	01/04/2022	Walloon Coal Measures	17.0-21.0	21.82	15.927	35.84	19.913	Good	0.85	19824	6.61	0.8	205.8	22.1	Clear	No odour	No sheen	Hydrasleeve™
0861	MW030	25/10/2022	Walloon Coal Measures	17.0-21.0	21.81	15.396	35.84	20.444	Good	2.97	24823	6.16	191.7	22.9		Clear	No odour	No sheen	Hydrasleeve™
0861	MW030	23/05/2023	Walloon Coal Measures	17.0-21.0	20.342	15.455	35.84	20.385	Good	2.7	1062	6.75	367.4	19.6		Cloudy, high turbidity	No odour	No sheen	HydraSleeve™
0861	MW031	22/04/2020	Tertiary Formation	14.5-20.5	18.23	15.421	33.45	18.029	Damaged	0.3	13724	7.16	222	21.2	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW031	13/10/2020	Tertiary Formation	14.5-20.5	18.13	15.668	33.45	17.782	Damaged	1.05	12366	6.77	-17.2	22.7	Turbid	Other	No odour	No sheen	Hydrasleeve™
0861	MW031	13/04/2021	Tertiary Formation	14.5-20.5	18.16	15.862	33.45	17.588	Damaged	1.09	14833	6.77	212.4	23.4	Medium	Brown	No odour	No sheen	Hydrasleeve™
0861	MW031	21/10/2021	Tertiary Formation	14.5-20.5	18.07	16.025	33.45	17.425	Damaged	-	-	-	-	-	-	-	-	-	Hydrasleeve™ Parameters erroneously not collected.
0861	MW031	01/04/2022	Tertiary Formation	14.5-20.5	18.03	16.109	33.45	17.341	Good	1.13	13761	6.56	-57.7	147.3	21.4	Light grey	No odour	No sheen	Hydrasleeve™
0861	MW031	25/10/2022	Tertiary Formation	14.5-20.5	18.01	16.075	33.45	17.375	Good	1.78	16690	6.86	138.8	23.3		Clear	No odour	No sheen	Hydrasleeve™
0861	MW031	27/04/2023	Tertiary Formation	14.5-20.5	18.065	15.952	33.45	17.498	Good	-	4135	6.71	259.3	21.7		Pale brown	No odour	No sheen	Bailer
0861	MW032	27/04/2020	Alluvium	8.0-14.0	14.7	10.305	26.28	15.975	Good	1.44	2438	7.74	158.5	19.6	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW032	12/10/2020	Alluvium	8.0-14.0	14.68	10.561	26.28	15.719	Good	0.58	2159	7.21	7.7	21.7	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW032	21/04/2021	Alluvium	8.0-14.0	14.68	10.078	26.28	16.202	Good	0.88	2935	6.84	324.1	24.4	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW032	25/10/2021	Alluvium	8.0-14.0	14.68	9.925	26.28	16.355	Good	0.43	2530	6.99	329.7	22.9	Clear	Light yellow	No odour	No sheen	Hydrasleeve™
0861	MW032	06/04/2022	Alluvium	8.0-14.0	14.63	9.04	26.28	17.24	Good	1.02	2848	7.05	-28.3	176.7	22.7	Clear	No odour	No sheen	Hydrasleeve™
0861	MW032	24/10/2022	Alluvium	8.0-14.0	14.69	9.365	26.28	16.915	Good	1.91	3442	6.36	135.3	24.2		Clear	No odour	No sheen	Hydrasleeve™
0861	MW032	27/04/2023	Alluvium	8.0-14.0	14.645	9.767	26.28	16.513	Good	1.06	3280	7.07	155.4	22.7		Pale brown	No odour	No sheen	HydraSleeve™
0861	MW033	28/04/2020	Walloon Coal Measures	29.0-33.0	35	24.232	42.456	18.224	Good	8.5	8490	6.69	238.4	-	Medium	Light brown	No odour	No sheen	Hydrasleeve™
0861	MW033	19/10/2020	Walloon Coal Measures	29.0-33.0	34.33	24.249	42.456	18.207	Good	0.82	13437	7.12	-126	28	Low	Clear	Organic odour	No sheen	Hydrasleeve™
0861	MW033	20/04/2021	Walloon Coal Measures	29.0-33.0	34.57	24.257	42.456	18.199	Good	0.08	15590	6.82	123	23.8	Clear	Clear	Organic odour	No sheen	Hydrasleeve™
0861	MW033	27/10/2021	Walloon Coal Measures	29.0-33.0	34.3	24.255	42.456	18.201	Good	0.38	15285	6.97	328.5	26	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW033	06/04/2022	Walloon Coal Measures	29.0-33.0	34.67	24.14	42.456	18.316	Good	0.6	13756	6.66	-48.5	156.5	24.1	Clear	No odour	No sheen	Hydrasleeve™
0861	MW033	26/10/2022	Walloon Coal Measures	29.0-33.0	33	24.065	42.456	18.391	Good	1.65	16326	6.23	137.9	24

Table T1 Groundwater Gauging and Water Quality Parameter Results, April 2020 to May 2023

Property ID	Well ID	Sample Date	Aquifer	Screen depth (m)	Well Depth (mbtoc)	Depth to Water (mbtoc)	TOC Elevation (mAHD)	Ground-water Elevation (mAHD)	Condition of Well	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)	Temp (°C)	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
0861	MW034	13/10/2020	Alluvium	5.0-10.0	10.73	9.321	24.305	14.984	Good	0.53	1626	7.57	-145.9	24.3	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW034	19/04/2021	Alluvium	5.0-10.0	10.7	9.031	24.305	15.274	Good	0.51	2059	7.36	329.1	24.5	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW034	21/10/2021	Alluvium	5.0-10.0	9.09	10.7	24.305	13.605	Good	2.02	2176	7.5	291.7	23.4	Clear	Light brown	No odour	No sheen	Hydrasleeve™
0861	MW034	01/04/2022	Alluvium	5.0-10.0	10.605	7.635	24.305	16.67	Good	1.05	675	7.69	6	211	21.6	Clear	No odour	No sheen	Hydrasleeve™
0861	MW034	09/11/2022	Alluvium	5.0-10.0	10.65	7.8	24.305	16.505	Good	3.4	1612	6.88	216	26.1		Clear	Sulfuric odour	No sheen	Hydrasleeve™
0861	MW034	22/05/2023	Alluvium	5.0-10.0	8.763	8.202	24.305	16.103	Good	2.2	1159	5.91	379.5	22.4		Cloudy, medium turbidity	No odour	No sheen	HydraSleeve™
0861	MW035	22/04/2020	Alluvium	8.0-13.5	14.78	11.259	24.999	13.74	Good	0.57	2649	6.83	202.7	22	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW035	14/10/2020	Alluvium	8.0-13.5	14.555	11.63	24.999	13.369	Good	0.35	2219	6.81	67.6	22	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW035	16/04/2021	Alluvium	8.0-13.5	14.53	11.2	24.999	13.799	Good	0.52	2812	6.67	318.3	23.5	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW035	21/10/2021	Alluvium	8.0-13.5	14.52	11.3	24.999	13.699	Good	0.65	3064	6.71	279.3	22.5	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW035	04/04/2022	Alluvium	8.0-13.5	14.455	10.26	24.999	14.739	Good	0.82	2553	6.86	111.4	316.4	23.3	Clear	No odour	No sheen	Hydrasleeve™
0861	MW035	09/11/2022	Alluvium	8.0-13.5	14.66	9.996	24.999	15.003	Good	3.5	2344	6.27	265	23.1		Clear	No odour	No sheen	Hydrasleeve™
0861	MW035	11/05/2023	Alluvium	8.0-13.5	13.5	10.43	24.999	14.569	Good	2.2	2841	6.29	362.6	21.1		Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW036	22/04/2020	Alluvium	10.2-15.2	15.175	13.211	24.04	10.829	Good	3.57	2028	8.02	236	23.4	Low	Light yellow	No odour	No sheen	Hydrasleeve™
0861	MW036	15/10/2020	Alluvium	10.2-15.2	15.18	13.368	24.04	10.672	Good	2	1713	7.43	80.8	21.9	Medium	Light brown	No odour	No sheen	Hydrasleeve™
0861	MW036	16/04/2021	Alluvium	10.2-15.2	14.95	13.212	24.04	10.828	Good	0.94	2108	7.3	316.3	23.7	Low	Light brown	No odour	No sheen	Hydrasleeve™
0861	MW036	21/10/2021	Alluvium	10.2-15.2	15.03	13.215	24.04	10.825	Good	2.4	2142	7.19	336.5	23.9	Turbid	Yellow / brown	No odour	No sheen	Hydrasleeve™
0861	MW036	04/04/2022	Alluvium	10.2-15.2	15.01	12.5	24.04	11.54	Good	0.94	1927	7.08	95.1	300.1	23.5	Clear	No odour	No sheen	Hydrasleeve™
0861	MW036	25/10/2022	Alluvium	10.2-15.2	15.01	12.5	24.04	11.54	Good	2.66	2308	7.15	380.7	21.4		Clear	No odour	No sheen	Hydrasleeve™
0861	MW036	20/04/2023	Alluvium	10.2-15.2	14.98	12.57	24.04	11.47	Good	1.2	923	7	289.9	22.1		Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW037	22/04/2020	Alluvium	5.0-10.0	11	8.12	25.219	17.099	Good	0.67	6412	7.57	205.1	23.7	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW037	12/10/2020	Alluvium	5.0-10.0	11	8.348	25.219	16.871	Good	0.11	5468	6.85	-11.1	21.1	Turbid	Grey	No odour	No sheen	Hydrasleeve™
0861	MW037	20/04/2021	Alluvium	5.0-10.0	11.00	8.227	25.219	16.992	Good	0.6	6658	7.14	159.5	22.1	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW037	27/10/2021	Alluvium	5.0-10.0	10.98	8.28	25.219	16.939	Good	0.89	7275	7.05	307.6	25.2	Clear	-	No odour	No sheen	Hydrasleeve™
0861	MW037	30/03/2022	Alluvium	5.0-10.0	10.97	7.567	25.219	17.652	Good	0.7	3998	6.98	-141	64	22.6	Light yellow / brown	No odour	No sheen	Hydrasleeve™
0861	MW037	24/10/2022	Alluvium	5.0-10.0	11	7.112	25.219	18.107	Good	2.1	8583	6.01	110.7	23.2		Clear	No odour	No sheen	Hydrasleeve™
0861	MW037	20/04/2023	Alluvium	5.0-10.0	10.972	7.134	25.219	18.085	Good	1.1	782	6.44	287.5	18.3		Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW039	-	Tertiary Formation		-	-	-	-	Destroyed	-	-	-	-	-	-	-	-	-	Hydrasleeve™
0861	MW039	-	Tertiary Formation		-	-	-	-	Destroyed	-	-	-	-	-	-	-	-	-	Hydrasleeve™
0861	MW039	-	Tertiary Formation		-	-	-	-	Destroyed	-	-	-	-	-	-	-	-	-	Hydrasleeve™
0861	MW040	-	Walloon Coal Measures		-	-	-	-	Destroyed	-	-	-	-	-	-	-	-	-	Hydrasleeve™
0861	MW040	-	Walloon Coal Measures		-	-	-	-	Destroyed	-	-	-	-	-	-	-	-	-	Hydrasleeve™
0861	MW040	-	Walloon Coal Measures		-	-	-	-	Destroyed	-	-	-	-	-	-	-	-	-	Hydrasleeve™
0861	MW041	23/04/2020	Walloon Coal Measures	11.5-14.5	14.5	9.671	46.383	36.712	Good	0.26	18136	6.96	152.3	25.9	Turbid	Light brown	Organic odour	No sheen	Hydrasleeve™
0861	MW041	14/10/2020	Walloon Coal Measures	11.5-14.5	14.39	9.986	46.383	36.397	Good	0.41	12182	6.76	104.8	23.7	Medium	Clear	No odour	No sheen	Hydrasleeve™
0861	MW041	15/04/2021	Walloon Coal Measures	11.5-14.5	-	-	-	-	Unknown	-	-	-	-	-	-	-	-	-	Not sampled- well not located
0861	MW041	22/10/2021	Walloon Coal Measures	11.5-14.5	-	10.021	46.383	36.362	Unknown	0.6	20046	6.68	230	26	Low	Light yellow	No odour	No sheen	Hydrasleeve™
0861	MW041	05/04/2022	Walloon Coal Measures	11.5-14.5	14.37	9.745	46.383	36.638	Good	0.45	15939	6.59	-69.1	135.9	26.6	Light yellow	No odour	No sheen	Hydrasleeve™
0861	MW041	25/10/2022	Walloon Coal Measures	11.5-14.5	14.43	6.764	46.383	39.619	Good	1.5	14064	6.46	141.8	25.4		Black	Hydrocarbon odour	No sheen	Hydrasleeve™
0861	MW041	19/04/2023	Walloon Coal Measures	11.5-14.5	11.141	8.29	46.383	38.093	Good	1.16	1977	6.91	245.1	28.5		Brown, medium turbidity	Organic odour	No sheen	HydraSleeve™
0861	MW042	28/04/2020	Walloon Coal Measures	24.0-30.0	29.5	22.059	40.036	17.977	Damaged	3.1	16133	6.67	214.8	17.8	Medium	Light brown	No odour	No sheen	Hydrasleeve™
0861	MW042	16/10/2020	Walloon Coal Measures	24.0-30.0	28.9	22.267	40.036	17.769	Damaged	0.85	15407	6.95	-107.3	23.3	Low	Clear	Organic odour	No sheen	Hydrasleeve™
0861	MW042	15/04/2021	Walloon Coal Measures	24.0-30.0	28.9	22.257	40.036	17.779	Damaged	0.7	18958	6.78	120.8	23.2	Low	Grey	Sulfuric odour	No sheen	Hydrasleeve™
0861	MW042	26/10/2021	Walloon Coal Measures	24.0-30.0	28.9	22.49	40.036	17.546	Damaged	0.76	16952	6.81	206.6	25.8	Low	Light grey	Sulfuric odour	No sheen	Hydrasleeve™
0861	MW042	05/04/2022	Walloon Coal Measures	24.0-30.0	28.86	22.27	40.036	17.766	Good	0.78	17179	6.59	-87.8	117.2	26.3	Clear	No odour	No sheen	Hydrasleeve™
0861	MW042	25/10/2022	Walloon Coal Measures	24.0-30.0	26.67	18.83	40.036	21.206	Good	0.00	19317	6.41	-44.9	25.3		Black	Hydrocarbon odour	No sheen	Hydrasleeve™
0861	MW042	27/04/2023	Walloon Coal Measures	24.0-30.0	29.075	22.324	40.036	17.712	Damaged	0.62	1617	6.99	139.6	23.4		Light brown	No odour	No sheen	HydraSleeve™
0861	MW043	28/04/2020	Walloon Coal Measures	18.0-21.0	21	14.634	49.182	34.548	Good	3.1	18800	6.57	219	17.8	Medium	Brown	No odour	No sheen	Hydrasleeve™
0861	MW043	16/10/2020	Walloon Coal Measures	18.0-21.0	20.63	14.658	49.182	34.524	Good	0.64	18408	7.23	-57.9	24.5	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW043	15/04/2021	Walloon Coal Measures	18.0-21.0	20.72	14.62	49.182	34.562	Good	0.64	22840	6.73	142.8	25.2	Low	Light Brown	Sulfuric odour	No sheen	Hydrasleeve™
0861	MW043	26/10/2021	Walloon Coal Measures	18.0-21.0	20.63	14.48	49.182	34.702	Good	0.91	3070	7.6	295.4	26.5	Medium	Orange / brown	No odour	No sheen	Hydrasleeve™
0861	MW043	05/04/2022	Walloon Coal Measures	18.0-21.0	20.58	13.695	49.182	35.487	Good	0.47	7177	7.11	-108.3	96.7	25.5	Light yellow / brown	No odour	No sheen	Hydrasleeve™
0861	MW043	25/10/2022	Walloon Coal Measures	18.0-21.0	20.87	11.717	49.182	37.465	Good	1	17232	6.24	172.1	25.4		Green	No odour	No sheen	Hydrasleeve™
0861	MW043	27/04/2023	Walloon Coal Measures	18.0-21.0	20.803	12.685	49.182	36.497	Good	0.79	3506	6.75	106.7	23.9		Light brown	Organic odour	No sheen	HydraSleeve™
0861	MW044	22/04/2020	Alluvium	8.0-11.0	11.085	8.864	20.311	11.447	Good	0.79	2247	7.55	205.5	22.8	Medium	Light brown	No odour	No sheen	Hydrasleeve™
0861	MW044	15/10/2020	Alluvium	8.0-11.0	11.18	9.099	20.311	11.212	Good	0.53	2418	7.02	-96.6	22.2	Turbid	Light grey	No odour	No sheen	Hydrasleeve™
0861	MW044	21/04/2021	Alluvium	8.0-11.0	11.25	8.883	20.311	11.428	Good	0.18	901	7.5	137.4	21.6	Medium	Brown	No odour	No sheen	Hydrasleeve™
0861	MW044	21/10/2021	Alluvium	8.0-11.0	11.13	8.85	20.311	11.461	Good	1.19	981	7.14	238.4	25.3	Low	Light grey	No odour	No sheen	Hydrasleeve™
0861	MW044	01/04/2022	Alluvium	8.0-11.0	11.11	8.225	20.311	12.086	Good	0.54	334.8	6.98	-101.3	103.7	23.3	Light yellow / brown	Sulfuric odour	No sheen	Hydrasleeve™
0861	MW044	26/10/2022	Alluvium	8.0-11.0	11.11	7.944	20.311	12.367	Good	0.74	317.1	6.83	192.9	23		Grey	No odour	No sheen	Hydrasleeve™
0861	MW044	11/05/2023	Alluvium	8.0-11.0	10.08	8.255	20.311	12.056	Good	0.62	332	6.85	114.4	23.5		Brown	Organic odour	No sheen	HydraSleeve™
0861	MW046	27/04/2020	Tertiary Formation	8.2-11.2	11.1	7.911	26.001	18.09	Good	0.45	3242	7.43	43	24.8	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW046	19/10/2020	Tertiary Formation	8.2-11.2	11.045	8.031	26.001	17.97	Good	0.37	3007	7.36	-77.6	26.2	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW046	20/04/2021	Tertiary Formation	8.2-11.2	11.10	7.813	26.001	18.188	Good	1.04	3308	7.55	141.3	25.2	Clear	Clear	Sulfuric odour	No sheen	Hydrasleeve™
0861	MW046	26/10/2021	Tertiary Formation	8.2-11.2	-	7.875	26.001	18.126	Good	0.59	3072	7.21	236.5	23.8	Low	Light grey	Sulfuric odour	No sheen	Hydrasleeve™
0861	MW046	30/03/2022	Tertiary Formation	8.2-11.2	11.04	7.32	26.001	18.681	Good	0.5	2295	7.17	-112.9	92.1	24.3	Light yellow / brown	No odour	No sheen	Hydrasleeve™
0861	MW046	25/10/2022	Tertiary Formation	8.2-11.2	11.02	7.165	26.001	18.836	Good	0.01	2255	6.92	122	24.5		Clear	No odour	No sheen	Hydrasleeve™
0861	MW046	17/04/2023	Tertiary Formation	8.2-11.2	11.072	7.89	26.001	18.111	Good	2.19	821	7.04	273.6	25.1		Light brown	Organic odour	No sheen	HydraSleeve™
0861	MW047	23/04/2020	Tertiary Formation	10.5-13.5	13.4	10.728	26.265	15.537	Damaged	0.62	3822	7.45	192.2	24.8	Medium	Light yellow	No odour	No sheen	Hydrasleeve™
0861	MW047	12/10/2020	Tertiary Formation	10.5-13.5	13.22	11.267	26.265	14.998	Damaged	0.1	5097	7.04	27.9	21.8	Medium	Clear	No odour	No sheen	Hydrasleeve™
0861	MW047	20/04/2021	Tertiary Formation	10.5-13.5	13.22	10.794	26.265	15.471	Damaged	0.54	6732	7.42	122.4	24.7	Clear	Clear	Organic odour	No sheen	Hydrasleeve™
0861	MW047	26/10/2021	Tertiary Formation	10.5-13.5	13.19	10.845	26.265	15.42	Damaged	0.5	1913	7.27	207.6	22.9	Low	Light grey	Sulfuric odour	No sheen	Hydrasleeve™
0861	MW047	30/03/2022	Tertiary Formation	10.5-13.5	13.17	9.72	26.265	16.545	Good	0.74	2703	7.38	-147.3	57.7	23.9	Light yellow / brown	No odour	No sheen	Hydrasleeve™
0861	MW047	25/10/2022	Tertiary Formation	10.5-13.5	13.26	9.469	26.265	16.796	Good	0.47	1618	6.91	122.8	22.8		Clear	No odour	No sheen	Hydrasleeve™
0861	MW047	20/04/2023	Tertiary Formation	10.5-13.5	13.182	9.795	26.265	16.47	Good	0.73	832	7.1	257.7	24.3		Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW048	24/04/2020	Alluvium	7.5-10.5	10.45	9.457	23.108	13.651	Good	3.77	614	6.59	205.7	28.4	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW048	12/10/2020	Alluvium	7.5-10.5	10.29	9.732	23.108	13.376	Good	2.96	450.8	7.48	450.4	22	Turbid	Brown	No odour	No sheen	Bailer
0861	MW048	16/04/2021	Alluvium	7.5-10.5	10.21	8.783	23.108	14.325	Good	1.25	351.8	6.42	421.2	22.8	Low	Light brown	No odour	No sheen	Hydrasleeve™
0861	MW048	21/10/2021	Alluvium	7.5-10.5	-	10.27	23.108	-	Good	1.68	262.9	6.62	247.8	21	Medium	Light brown	No odour	No sheen	Bailer. Water level below top of hydrasleeve.
0861	MW048	29/03/2022	Alluvium	7.5-10.5	10.23	7.07	23.108	16.038	Good	2.8	314.1	6.57	6.5	211.5	22	Light grey	No odour	No sheen	Hydrasleeve™
0861	MW048	25/10/2022	Alluvium	7.5-10.5	10.25	7.138	23.108	15.97	Good	1.08	622	6.32	164	22.8		Clear	No odour	No sheen	Hydrasleeve™
0861	MW048	17/04/2023	Alluvium	7.5-10.5	10.245	8.32	23.108	14.788	Good	2.06	532	5.32	349.5	23.4		Light brown, low turbidity	No odour	No sheen	HydraSleeve™
0861	MW049	24/04/2020	Alluvium	7.5-10.5	10.4	8.99	22.044	13.054	Good	2.06	1089	6.65	160.6	28	Low	Light brown	Sulfuric odour	No sheen	Hydrasleeve™
0861	MW049	12/10/2020	Alluvium	7.5-10.5	10.28	9.205	22.044	12.839	Good	1.13	1032	6.81	47	23.9	Medium	Clear	Slight organic odour	No sheen	Hydrasleeve™
0861	MW049	20/04/2021	Alluvium	7.5-10.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Not sampled- well not located
0861	MW049	21/10/2021	Alluvium	7.5-10.5	-	10.29	-	-	Good	0.63	956	6.61	183.2	21.6	Low	Light yellow	No odour	No sheen	Bailer. Water level below top of hydrasleeve™
0861	MW049	07/04/2022	Alluvium	7.5-10.5	10.26	8.065	22.044	13.979	Good	0.41	332.5	6.54	-93.9	111.1	21.7	Clear	No odour	No sheen	Hydrasleeve™
0861	MW049	25/10/2022	Alluvium	7.5-10.5	10.26	7.787	22.044	14.257	Good	2.43	440.2	6.58	160.2	22.9		Clear	No odour	No sheen	Hydrasleeve™
0861	MW049	Not found		7.5-10.5															Not found
0861	MW050	24/04/2020	Alluvium	11.5-14.5	14.5	11.09	24.317	13.227	Damaged	5.36	1943	7.22	167.8	28.3	Low	Light yellow	Organic odour	No sheen	Hydrasleeve™
0861	MW050	12/10/2020	Alluvium	11.5-14.5	-	11.406	24.317	12.911	Damaged	0.67	1487	7.23	-133.2	23.3	Clear	Clear	Slight organic odour	No sheen	Hydrasleeve™
0861	MW050	21/04/2021	Alluvium	11.5-14.5	14.2	11.195	24.317	13.122	Damaged	2.01	641	7.53	241.6	23.4	Medium	Brown	No odour	No sheen	Hydrasleeve™
0861	MW050	28/10/2021	Alluvium	11.5-14.5	14.39	11.15	24.317	13.167	Damaged	1.59	1078	6.83	368.3	27.1	Low	Light grey	No odour	No sheen	Hydrasleeve™
0861	MW050	30/03/2022	Alluvium	11.5-14.5	14.31	10.01	24.317	14.307	Good	0.82	1524	7.08	-118.5	86.5	23.7	Light yellow	No odour	No sheen	Hydrasleeve™
0861	MW050	24/10/2022	Alluvium	11.5-14.5	14.31	10.01	24.317	14.307	Good	5.37	436.1	6.66	121.9	23.8		Clear	No odour	No sheen	Hydrasleeve™
0861	MW050	17/04/2023	Alluvium	11.5-14.5	14.368	10.08	24.317	14.237	Damaged	1.11	410.4	6.13	301.3	25.1		Brown	No odour	No sheen	HydraSleeve™
0861	MW054D	24/04/2020	Walloon Coal Measures	18.0-21.0	21.2	6.236	20.454	14.218	Good	3.76	1333	7.15	200	27.9	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW054D	23/10/2020	Walloon Coal Measures	18.0-21.0	20.96	6.402	24.317	17.915	Good	0.54	1110	7.23	-101.3	23.1	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW054D	21/04/2021	Walloon Coal Measures	18.0-21.0	21.00	6.311	24.317	18.006	Good	0.37	318	6.69	182.5	23.1	Medium	Brown	No odour	No sheen	Hydrasleeve™
0861	MW054D	28/10/2021	Walloon Coal Measures	18.0-21.0	20.93	6.27	24.317	18.047	Good	0.35	279.2	6.95	157.7	27	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW054D	05/04/2022	Walloon Coal Measures	18.0-21.0	20.79	5.315	20.454	15.139	Good	0.23	321.1	6.43	-88.8	116.2	26	Light yellow	No odour	No sheen	Hydrasleeve™
0861	MW054D	09/11/2022	Walloon Coal Measures	18.0-21.0	21.06	5.236	20.454	15.218	Good	1.7	561	6.33	218.3	22.5		Brown	No odour	No sheen	Hydrasleeve™
0861	MW054D	26/04/2023	Walloon Coal Measures	18.0-21.0	20.713	5.434	20.454	15.02	Good	0.13	361.9	6.8	234.7	22.9		Pale brown	No odour	No sheen	HydraSleeve™
0861	MW054S	24/04/2020	Alluvium	4.0-7.0	6.9	6.456	20.38	13.924	Good	2.62	3188	6.89	206.2	27.8	Turbid	Brown	No odour	No sheen	Hydrasleeve™
0861	MW054S	24/04/2020	Alluvium	4.0-7.0	6.93	6.734	24.317	17.583	Good	1.4	3055	6.85	61.7	23	Turbid	Brown	-	-	Not sampled
0861	MW054S	21/04/2021	Alluvium	4.0-7.0	6.92	6.579	24.317	17.738	Good	-	-	-	-	-	-	-	-	-	Insufficient water
0861	MW054S	28/10/2021	Alluvium	4.0-7.0	6.89	6.53	24.317	17.787	Good	1.19	4768	6.79	272	23.7	Turbid	Brown	No odour	No sheen	Hydrasleeve™
0861	MW054S	05/04/2022	Alluvium	4.0-7.0	6.9	4.895	20.38	15.485	Good	0.77	2834	6.75	-83	122	24.3	Light yellow	No odour	No sheen	Hydrasleeve™
0861	MW054S	09/11/2022	Alluvium	4.0-7.0	6.92	4.704	20.38	15.676	Good	1.9	2771	6.69	229.5	21.4		Clear	No odour	No sheen	Hydrasleeve™
0861	MW054S	26/04/2023	Alluvium	4.0-7.0	6.895	5.347	20.38	15.033	Good	-	3522	6.93	250.8	23.8		Pale brown	No odour	No sheen	HydraSleeve™
0861	MW055D	22/04/2020	Walloon Coal Measures	28.0-34.0	31.5	8.923	22.196	13.273	Good	0.29	6538	7.63	131.8	21.7	Low	Light brown	No odour	No sheen	Hydrasleeve™
0861	MW055D	14/10/2020	Walloon Coal Measures	28.0-34.0	33.8	8.846	24.317	15.471	Good	1.39	6109	7.32	-70.9	22.9	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW055D	16/04/2021	Walloon Coal Measures	28.0-34.0	33.94	8.836	24.317	15.481	Good	0.54	7069	7.41	242.4	22	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW055D	21/10/2021	Walloon Coal Measures	28.0-34.0	33.84	8.751	24.317	15.566	Good	0.46	7526	7.44	162.9	22.4	Clear	Clear	Sulfuric odour	No sheen	Hydrasleeve™
0861	MW055D	01/04/2022	Walloon Coal Measures	28.0-34.0	33.76	8.14	22.196	14.056	Good	0.64	55033	7.35	-91.3	113.7	24.5	Clear	No odour	No sheen	Hydrasleeve™
0861	MW055D	20/10/2022	Walloon Coal Measures	28.0-34.0	33.44	7.885	22.196	14.311	Good	1.61	7726	7	163.5	22.1		Clear	No odour	No sheen	Hydrasleeve™
0861	MW055D	11/05/2023	Walloon Coal Measures	28.0-34.0	32.56	8.152	22.196	14.044	Good	0.81	5120	7.42	121.2	22.4		Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW055S	22/04/2020	Alluvium	9.0-12.0	11.8	9.2	22.14	12.94	Good	0.31	2663	7.4	183.1	21.1	Low	Light brown	No odour	No sheen	Hydrasleeve™
0861	MW055S	14/10/2020	Alluvium	9.0-12.0	11.69	9.617	24.317	14.7	Good	1.51	2944	7.86	6.5	22	Clear	Clear	Slight organic odour	No sheen	Hydrasleeve™
0861	MW055S	16/04/2021	Alluvium	9.0-12.0	10.62	8.897	24.317	15.42	Good	0.22	1275	6.98	232.1	22.7	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW055S	21/10/2021	Alluvium	9.0-12.0	-	8.831	24.317	15.486	Good	2.38	1631	7.07	174.7	22	Clear	Light yellow	Slight organic odour	No sheen	Hydrasleeve™
0861	MW055S	01/04/2022	Alluvium	9.0-12.0	11.57	7.635	22.14	14.505	Good	0.33	1155	6.72	-78.3	126.7	23.7	Clear	No odour	No sheen	Hydrasleeve™
0861	MW055S	20/10/2022	Alluvium	9.0-12.0	11.72	7.412	22.14	14.728	Good	4.79	682	7.13	217.4	21.6		Clear	No odour	No sheen	Hydrasleeve™
0861	MW055S	11/05/2023	Alluvium	9.0-12.0	10.49	8.483	22.14	13.657	Good	0.35	1205	6.72	128.4	23.3		Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW056D	22/04/2020	Tertiary Formation	15.0-18.0	17.7	7.012	14.762	7.75	Good	0.41	6193	7.28	111.5	24.4	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW056D	15/10/2020	Tertiary Formation	15.0-18.0	19.8	7.811	14.762	6.951	Good	0.23	7639	6.77	-98.1	27.2	Turbid	Black	-	-	Hydrasleeve™
0861	MW056I		Tertiary Formation	15.0-18.0	Unable to access due to dense vegetation														Hydrasleeve™
0861	MW056I	15/04/2021	Tertiary Formation	15.0-18.0	17.7	9.598	14.762	5.164	Good	0.47	1903	7.23	305.7	24.2	Clear	Clear	Slight organic odour	No sheen	Hydrasleeve™
0861	MW056I	22/10/2021	Tertiary Formation	15.0-18.0	-	9.44	14.762	5.322	Good	0.75	4248	6.83	205.6	24.6	Low	Clear	Organic odour	No sheen	Hydrasleeve™
0861	MW056I	29/03/2022	Tertiary Formation	15.0-18.0	18.00	4.95	14.762	9.812	Good	0.63	405.6	6.83	-41	164	22	Light grey	Weak Septic	No sheen	Hydrasleeve™
0861	MW056I	18/04/2023	Tertiary Formation	15.0-18.0	18.8	6.032	14.762	8.73	Good	0.46	368	7.34	243.5	22		Light brown, low turbidity	Organic odour	No sheen	HydraSleeve™
0861	MW056S	22/04/2020	Alluvium	6.5-9.5	9.455	7.309	15.078	7.769	Good	1.42	8385	7.09	213.6	29	Low	Clear	No odour	No sheen	Hydrasleeve™
0861

Table T1 Groundwater Gauging and Water Quality Parameter Results, April 2020 to May 2023

Property ID	Well ID	Sample Date	Aquifer	Screen depth (m)	Well Depth (mbtoc)	Depth to Water (mbtoc)	TOC Elevation (mAHD)	Ground-water Elevation (mAHD)	Condition of Well	DO (mg/L)	EC (µS/cm)	pH	Eh (mV)	Temp (°C)	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
0861	MW056S	22/10/2021	Alluvium	6.5-9.5	-	6.803	15.078	8.275	Good	1.11	3533	7	203.7	25.4	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW056S	29/03/2022	Alluvium	6.5-9.5	9.50	5.295	15.078	9.783	Good	0.63	405.6	6.83	-61.9	143.1	22.4	Light grey	Weak Septic	No sheen	Hydrasleeve™
0861	MW056S		Alluvium	6.5-9.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Not sampled- well not located
0861	MW057I	28/04/2020	Tertiary Formation	12.5-15.5	15.6	6.789	16.494	9.705	Good	5.1	1337	7.32	109.8	17.8	Low	Light yellow	Organic odour	No sheen	Hydrasleeve™
0861	MW057I	15/10/2020	Tertiary Formation	12.5-15.5	15.46	7.886	16.494	8.608	Good	1.7	1545	7.19	0.9	22.7	Turbid	Light brown	No odour	No sheen	Hydrasleeve™
0861	MW057I	21/04/2021	Tertiary Formation	12.5-15.5	15.5	6.503	16.494	9.991	Good	-	-	-	-	-	-	-	Slight organic odour	No sheen	Hydrasleeve™
0861	MW057I	22/10/2021	Tertiary Formation	12.5-15.5	16.5	6.26	16.494	10.234	Good	0.56	844	7.12	128	26.1	Low	Light yellow	No odour	No sheen	Hydrasleeve™
0861	MW057I	04/04/2022	Tertiary Formation	12.5-15.5	15.445	5.41	16.494	11.084	Good	0.91	418.6	6.99	-96.8	108.2	23.7	Light yellow	Sulfuric odour	No sheen	Hydrasleeve™
0861	MW057I	26/10/2022	Tertiary Formation	12.5-15.5	15.44	5.52	16.494	10.974	Good	3.31	513.9	6.95	182.1	22.3		Grey	No odour	No sheen	Hydrasleeve™
0861	MW057I	19/04/2023	Tertiary Formation	12.5-15.5	15.442	5.672	16.494	10.822	Good	0.5	682	7.06	212.4	22.1		Pale brown, medium turbidity	No odour	No sheen	Hydrasleeve™
0861	MW057S	28/04/2020	Alluvium	5.5-8.5	8.5	7.265	16.479	9.214	Good	0.67	523	8.99	118.9	22.4	Low	Light yellow	Organic odour	No sheen	Hydrasleeve™
0861	MW057S	15/10/2020	Alluvium	5.5-8.5	8.49	6.874	16.479	9.605	Good	0.94	1422	7.15	-91.5	23	Low	Clear	No odour	No sheen	Hydrasleeve™
0861	MW057S	21/04/2021	Alluvium	5.5-8.5	8.5	7.025	16.479	9.454	Good	1.2	475.9	6.39	223.2	20.2	Medium	Brown	No odour	No sheen	Hydrasleeve™
0861	MW057S	22/10/2021	Alluvium	5.5-8.5	8.48	6.98	16.479	9.499	Good	0.45	891	6.72	130.7	25.8	Low	Light yellow	No odour	No sheen	Bailer
0861	MW057S	04/04/2022	Alluvium	5.5-8.5	8.45	4.5	16.479	11.979	Good	1.26	613	6.9	-110.2	94.8	23.4	Clear	No odour	No sheen	Hydrasleeve™
0861	MW057S	26/10/2022	Alluvium	5.5-8.5	8.41	3.992	16.479	12.487	Good	0.03	1622	7.03	177.9	21.8		Grey	No odour	No sheen	Hydrasleeve™
0861	MW057S	19/04/2023	Alluvium	5.5-8.5	8.44	5.692	16.479	10.787	Good	0.5	1556	6.94	233.3	23.3		Pale brown, medium turbidity	No odour	No sheen	Hydrasleeve™
0861	MW309	27/04/2020	Tertiary Formation	13.0-19.0	19.7	10.95	28.607	17.657	Good	0.33	10723	6.91	105.5	25.1	Medium	Yellow / brown	Organic odour	No sheen	Hydrasleeve™
0861	MW309	13/10/2020	Tertiary Formation	13.0-19.0	19.35	11.035	28.607	17.572	Good	0.62	9703	7.09	-88.1	24	Medium	Clear	Sulfuric odour	No sheen	Hydrasleeve™
0861	MW309	20/04/2021	Tertiary Formation	13.0-19.0	19.3	10.981	28.607	17.626	Good	0.6	12844	6.87	163	26.4	Clear	Clear	No odour	No sheen	Hydrasleeve™
0861	MW309	26/10/2021	Tertiary Formation	13.0-19.0	19.3	10.955	28.607	17.652	Good	1.06	7163	6.88	284.5	24.2	Low	Grey		-	Bailer- no parameters
0861	MW309	30/03/2022	Tertiary Formation	13.0-19.0	19.23	10.685	28.607	17.922	Good	0.27	10890	6.6	-73.6	131.4	25.4	Grey	No odour	No sheen	Hydrasleeve™
0861	MW309	25/10/2022	Tertiary Formation	13.0-19.0	19.39	10.605	28.607	18.002	Good	1.5	14064	6.46	142.8	25.4		Clear	No odour	No sheen	Hydrasleeve™
0861	MW309	20/04/2023	Tertiary Formation	13.0-19.0	19.288	10.524	28.607	18.083	Good	0.78	793	6.17	316.2	23.9		Light brown, non-turbid	No odour	No sheen	HydraSleeve™

Notes
All Hydrasleeves™ were installed a minimum of 24 hours prior to sampling
m - metres
m btoc - metres below top of casing
m AHD - metres above Australian Height Datum
TOC - Top of Casing
DO - Dissolved Oxygen
EC - Electrical Conductivity
Eh - Corrected Oxidation Reduction Potential
` - no data
mg/L - milligrams per litre
µS/cm - microsiemens per centimetre
mV - millivolts
°C - degrees Celsius

Table T2 Groundwater PFAS Analytical Results

				Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids										Perfluoroalkyl Sulfonamides							Fluorotelomer Sulfonic Acids				Sums		PFOS	
				PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
	Unit			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR			0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.001	0.001	0.001	0.001	0.0002	0.0002	0.002	0.002
HEPA 2020 Drinking Water Guideline Value														**0.56**																	**0.07**			
HEPA 2020 Freshwater 95% Guideline Value								*0.13*						*220*																				
HEPA 2020 Freshwater 99% Guideline Value								*0.00023*						*19*																				
Project ID	**Location**	**Date**	**Type**																																
QLD_0861_PFAS	MW492	13 Jun 2018	Normal	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.01*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.005*	*<0.002*	*<0.005*	*<0.002*	*<0.005*	*<0.005*	*<0.002*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.002*	*<0.002*	*<0.002*	*<0.002*
QLD_0861_PFAS	MW491	27 Jul 2018	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
QLD_0861_PFAS	MW491	27 Jul 2018	Interlab_D	0.004	0.002	0.005	*<0.001*	*0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	*<0.002*	*<0.002*	*<0.005*	*<0.01*	*<0.05*	*<0.01*	*<0.005*	*<0.002*	*<0.005*	*<0.01*	*<0.002*	*<0.05*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	-	-	-	-
QLD_0861_PFAS	MW491	27 Jul 2018	Field_D	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
QLD_0861_PFAS	MW490	07 Feb 2018	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFAS	MW490	29 Jun 2018	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFAS	MW487	05 Mar 2018	Normal	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.2*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*
QLD_0861_PFAS	MW487	06 Jul 2018	Normal	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.2*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*
QLD_0861_PFAS	MW487	06 Jul 2018	Interlab_D	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.05*	*<0.1*	*<0.5*	*<0.1*	*<0.05*	*<0.02*	*<0.05*	*<0.1*	*<0.02*	*<0.5*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-
QLD_0861_PFAS	MW487	06 Jul 2018	Field_D	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.2*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*
QLD_0861_Stage2	MW486	17 Dec 2018	Normal	*<0.05*	*<0.05*	0.26	*<0.05*	*<0.05*	*<0.05*	*<0.2*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.26**	0.26	-	-
QLD_0861_Stage2	MW486	17 Dec 2018	Interlab_D	0.024	0.028	0.31	*<0.01*	*0.025*	*<0.01*	*<0.05*	*<0.02*	0.056	*<0.01*	0.012	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	0.013	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	0.012	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_Stage2	MW486	17 Dec 2018	Field_D	*<0.05*	*<0.05*	0.28	*<0.05*	*<0.05*	*<0.05*	*<0.2*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.28**	0.28	-	-
QLD_0861_Stage2	MW485	17 Dec 2018	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*0.07*	*<0.02*	*<0.1*	*<0.02*	0.02	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.07	0.09	-	-
QLD_0861_Stage2	MW483	31 May 2018	Normal	*<0.20*	-	*<0.20*	-	*0.86*	-	*<1.0*	*<0.20*	*<0.20*	*<0.20*	*<0.20*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.20*	*<0.20*	*<0.20*	*<0.20*	**0.86**	-	-	-
QLD_0861_Stage2	MW482	31 May 2018	Normal	*<0.10*	-	*<0.10*	-	*0.11*	-	*<0.5*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.10*	*<0.10*	*<0.10*	*<0.10*	**0.11**	-	-	-
QLD_0861_Stage2	MW481	31 May 2018	Normal	*<0.20*	-	*<0.20*	-	*<0.20*	-	*<1.0*	*<0.20*	*<0.20*	*<0.20*	*<0.20*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.20*	*<0.20*	*<0.20*	*<0.20*	*<0.20*	-	-	-
QLD_0861_Stage2	MW481	31 May 2018	Interlab_D	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*0.025*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_Stage2	MW481	31 May 2018	Field_D	*<0.20*	-	*<0.20*	-	*<0.20*	-	*<1.0*	*<0.20*	*<0.20*	*<0.20*	*<0.20*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.20*	*<0.20*	*<0.20*	*<0.20*	*<0.20*	-	-	-
QLD_0861_PFAS	MW479	18 Jan 2018	Normal	*<0.02*	*<0.02*	0.03	*<0.02*	*0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.05	0.05	0.01	0.01
QLD_0861_PFAS	MW479	02 Jun 2018	Normal	0.006	0.005	0.02	*<0.002*	*0.005*	*<0.002*	*<0.01*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.005*	*<0.002*	*<0.005*	*<0.002*	*<0.005*	*<0.005*	*<0.002*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	0.025	0.036	0.002	0.003
QLD_0861_PFAS	MW478	05 Mar 2018	Normal	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.2*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*
QLD_0861_PFAS	MW478	05 Mar 2018	Field_D	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.2*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*
QLD_0861_PFAS	MW477	27 Mar 2018	Normal	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.2*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*
QLD_0861_PFAS	MW477	05 Jun 2018	Normal	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.01*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.005*	*<0.002*	*<0.005*	*<0.002*	*<0.005*	*<0.005*	*<0.002*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.002*	*<0.002*	*<0.002*	*<0.002*
QLD_0861_PFAS	MW476	01 Jun 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
QLD_0861_PFAS	MW476	12 Jan 2018	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
QLD_0861_PFAS	MW475	30 May 2017	Normal	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.01*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.005*	*<0.002*	*<0.005*	*<0.002*	*<0.005*	*<0.005*	*<0.002*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.002*	*<0.002*	*<0.002*	*<0.002*
QLD_0861_PFAS	MW475	13 Sep 2017	Normal	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.01*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.002*	*<0.005*	*<0.002*	*<0.005*	*<0.002*	*<0.005*	*<0.005*	*<0.002*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.002*	*<0.002*	*<0.002*	*<0.002*
QLD_0861_PFAS	MW475	12 Jan 2018	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
QLD_0861_PFAS	MW475	12 Jan 2018	Field_D	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
QLD_0861_PFAS	MW309	02 May 2019	Interlab_D	0.1	0.14	0.8	0.07	*0.58*	*<0.02*	**0.02**	*<0.02*	0.08	0.01	0.04	*<0.01*	*<0.02*	*<0.02*	*<0.05*	*<0.1*	*<0.5*	*<0.1*	*<0.05*	*<0.02*	*<0.05*	*<0.1*	*<0.02*	*<0.5*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	**1.4**	1.8	-	-
QLD_0861_PFAS	MW309	08 May 2019	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.02	0.02	-	-
QLD_0861_PFAS	MW309	08 May 2019	Field_D	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.02	0.02	-	-
QLD_0861_PFAS	MW309	27 Nov 2019	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.08	*<0.05*	*<0.05*	*<0.01*	0.08	-	-
QLD_0861_PFASOMP	MW309	27 Apr 2020	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW309	13 Oct 2020	Normal	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.25*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	0.06	*<0.05*	*<0.05*	*<0.05*	0.06	-	-
QLD_0861_PFASOMP	MW309	20 Apr 2021	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW309	26 Oct 2021	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW309	30 Mar 2022	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	-	-
QLD_0861_PFASOMP	MW309	25 Oct 2022	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	-	-
QLD_0861_PFASOMP_23	MW309	20 Apr 2023	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP_23	MW309	20 Apr 2023	Interlab_D	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP_23	MW309	20 Apr 2023	Field_D	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFAS	MW307	08 May 2019	Normal	2.32	2.62	23.5	2.24	*29.4*	*<0.02*	**0.8**	2.34	3.93	1.16	**1.44**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.24	*<0.05*	*<0.05*	**53**	70	-	-
QLD_0861_PFAS	MW307	26 Nov 2019	Normal	1.95	1.49	14.5	1.7	*22.9*	*<0.02*	**0.8**	2.1	3.31	1.04	**1.15**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.22	*<0.05*	*<0.05*	**37.4**	51.2	-	-
QLD_Hist_202012-3	MW275	03 Jul 2017	Normal	0.18	0.1	0.18	*<0.01*	*0.04*	*<0.01*	*<0.05*	0.05	0.15	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	-	-	-
QLD_Hist_202012-3	MW274	03 Jul 2017	Normal	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	-	-	-	-
QLD_Hist_202012-3	MW265	11 Feb 2013	Normal	-	-	-	-	*335*	-	-	-	-	-	**8.2**	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-
QLD_Hist_202012-3	MW265	28 Aug 2013	Normal	-	-	-	-	*118*	-	-	-	-	-	**16.5**	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-
QLD_Hist_202012-3	MW265	02 Mar 2017	Normal	1.97	2.69	30	1.11	*10.3*	*<0.02*	**0.4**	0.73	3.62	0.61	**1.78**	0.04	0.02	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.06	0.06	*<0.05*	**40.3**	53.4	-	-
QLD_Hist_202012-3	MW265	17 Oct 2017	Normal	1.06	1.15	8.2	0.59	*38.9*	*<0.02*	*<0.1*	0.4	1.76	0.46	**1.74**	0.04	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.05	*<0.05*	*<0.05*	**47.1**	54.4	-	-
QLD_Hist_202012-3	MW264	12 Sep 2014	Normal	-	-	-	-	*0.04*	-	-	-	-	-	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	*<0.1*	-	-	-	-	-
QLD_Hist_202012-3	MW264	12 Sep 2014	Field_D	-	-	-	-	*0.05*	-	-	-	-	-	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	*<0.1*	-	-	-	-	-
QLD_Hist_202012-3	MW263	12 Sep 2014	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	0.04	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	*<0.1*	-	-	-	-	-
QLD_Hist_202012-3	MW262	12 Sep 2014	Normal	-	-	-	-	*0.08*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	*<0.1*	-	-	-	-	-
QLD_Hist_202012-3	MW261	12 Sep 2014	Normal	-	-	-	-	*0.15*	-	-	-	-	-	0.03	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	*<0.1*	-	-	-	-	-
QLD_Hist_202012-3	MW260	12 Sep 2014	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	*<0.1*	-	-	-	-	-
QLD_Hist_202012-3	MW259	12 Sep 2014	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	*<0.1*	-	-	-	-	-
QLD_Hist_202012-3	MW258	12 Sep 2014	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	*<0.1*	-	-	-	-	-
QLD_Hist_202012-3	MW257	12 Sep 2014	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	*<0.1*	-	-	-	-	-
QLD_Hist_202012-3	MW256	12 Sep 2014	Normal	-	-	-	-	*0.05*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	*<0.1*	-	-	-	-	-
QLD_Hist_202012-3	MW255	12 Sep 2014	Normal	-	-	-	-	*61.1*	-	-	-	-	-	**9.62**	-	-	-	-	-	-	-	-	-	-	-	-	-	1.6	*<0.1*	-	-	-	-	-
QLD_Hist_202012-3	MW254	12 Sep 2014	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	*<0.1*	-	-	-	-	-
QLD_Hist_202012-3	MW253	12 Sep 2014	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	*<0.1*	-	-	-	-	-
QLD_Hist_202012-3	MW252	12 Sep 2014	Normal	-	-	-	-	*3*	-	-	-	-	-	0.24	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	*<0.1*	-	-	-	-	-
QLD_Hist_202012-3	MW251	12 Sep 2014	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	*<0.1*	-	-	-	-	-
QLD_Hist_202012-3	MW250	12 Sep 2014	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	*<0.1*	-	-	-	-	-
QLD_Hist_202012-3	MW248	06 Nov 2014	Normal	*<0.02*	-	*<0.02*	-	*<0.02*	-	-	-	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.5*	*<0.02*	*<0.5*	-	*<0.5*	*<0.05*	-	*<0.5*	-	*<0.1*	-	-	-	-	-	-	-
QLD_Hist_202012-3	MW247	06 Nov 2014	Normal	6.56	-	111	-	*155*	-	-	-	13.2	2.5	**1.95**	0.48	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.5*	*<0.02*	*<0.5*	-	*<0.5*	*<0.05*	-	*<0.5*	-	11.3	-	-	-	-	-	-
QLD_Hist_202012-3	MW247	06 Nov 2014	Interlab_D	7.3	-	42	-	*74*	*<0.01*	-	3.9	9.1	1.2	**2.4**	0.04	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	-	-	*<0.05*	-	-	0.03	0.91	*<0.01*	-	-	-	-	-
QLD_Hist_202012-3	MW247	06 Nov 2014	Field_D	6.95	-	123	-	*141*

Table T2 Groundwater PFAS Analytical Results

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Perfluoroalkyl Sulfonamides							Fluorotelomer Sulfonic Acids				Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
	Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.001	0.001	0.001	0.001	0.0002	0.0002	0.002	0.002
HEPA 2020 Drinking Water Guideline Value												**0.56**																		**0.07**			
HEPA 2020 Freshwater 95% Guideline Value						*0.13*						*220*																					
HEPA 2020 Freshwater 99% Guideline Value						*0.00023*						*19*																					
Project ID	**Location**	**Date**	**Type**																														
QLD_Hist_202012-3	MW229	17 Oct 2012	Normal	-	-	-	-	*3.46*	-	-	-	-	-	**0.95**	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW229	06 Feb 2013	Normal	-	-	-	-	*3.64*	-	-	-	-	-	0.4	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW229	28 Aug 2013	Normal	-	-	-	-	*3.31*	-	-	-	-	-	**0.83**	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW229	12 Sep 2014	Normal	-	-	-	-	*4.7*	-	-	-	-	-	**1.03**	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	*<0.1*	-	-	-	-	-
QLD_Hist_202012-3	MW227	30 Jul 2012	Normal	-	-	-	-	*19.9*	-	-	-	-	-	**4.08**	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW227	15 Oct 2012	Normal	-	-	-	-	*46*	-	-	-	-	-	***19.2***	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW227	06 Feb 2013	Normal	-	-	-	-	*41.1*	-	-	-	-	-	**0.61**	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW227	27 Aug 2013	Normal	-	-	-	-	*52.3*	-	-	-	-	-	***42.8***	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW226	30 Jul 2012	Normal	-	-	-	-	*0.16*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW226	15 Oct 2012	Normal	-	-	-	-	*0.12*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW226	06 Feb 2013	Normal	-	-	-	-	*7.24*	-	-	-	-	-	0.12	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW226	27 Aug 2013	Normal	-	-	-	-	*0.09*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_0861_FSBGME	MW110	25 Jun 2019	Normal	0.01	0.01	0.09	*<0.01*	*0.03*	*<0.01*	*<0.05*	*<0.01*	0.02	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	**0.12**	0.16	-	-
QLD_0861_FSBGME	MW106	25 Jun 2019	Normal	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.1*	-	-
QLD_0861_FSBGME	MW105	25 Jun 2019	Normal	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.1*	-	-
QLD_0861_FSBGME	MW103	25 Jun 2019	Normal	3.4	3.7	36	2.7	*120*	*<0.1*	**0.83**	0.89	4.9	1.1	**2.7**	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	0.01	0.13	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	*<0.1*	**156**	178.56	-	-
QLD_0861_FSBGME	MW101	25 Jun 2019	Normal	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.1*	-	-
QLD_0861_FSBGME	MW073	25 Jun 2019	Normal	0.24	0.27	1.6	0.08	*3.5*	*<0.01*	**0.08**	0.05	0.25	0.04	0.12	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	**5.1**	6.37	-	-
QLD_0861_FSBGME	MW072	25 Jun 2019	Normal	0.1	0.09	0.83	*<0.01*	*0.19*	*<0.01*	**0.05**	0.02	0.05	*<0.01*	0.02	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	**1.02**	1.4	-	-
QLD_0861_FSBGME	MW071	25 Jun 2019	Normal	0.11	0.12	0.61	*<0.01*	*0.06*	*<0.01*	**0.05**	0.02	0.07	*<0.01*	0.01	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	**0.67**	1.1	-	-
QLD_0861_FSBGME	MW070	25 Jun 2019	Normal	0.06	0.05	0.18	*<0.01*	*0.03*	*<0.01*	*<0.05*	0.02	0.06	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	**0.21**	0.43	-	-
QLD_0861_FSBGME	MW068	25 Jun 2019	Normal	*<0.01*	*<0.01*	0.02	*<0.01*	*0.04*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	0.06	*<0.1*	-	-
QLD_0861_FSBGME	MW067	25 Jun 2019	Normal	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.1*	-	-
QLD_0861_FSBGME	MW066	25 Jun 2019	Normal	*<0.01*	*<0.01*	0.01	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	0.01	*<0.1*	-	-
QLD_0861_FSBGME	MW065	25 Jun 2019	Normal	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*0.03*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	0.03	*<0.1*	-	-
QLD_0861_FSBGME	MW064	25 Jun 2019	Normal	*<0.01*	*<0.01*	0.02	*<0.01*	*0.03*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	0.05	*<0.1*	-	-
QLD_0861_FSBGME	MW063	25 Jun 2019	Normal	0.5	0.68	5.7	0.2	*1.9*	*<0.01*	**0.1**	0.13	0.94	0.16	0.42	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	**7.6**	11.14	-	-
QLD_0861_PFAS	MW057S	22 Feb 2018	Normal	0.12	0.08	0.13	*<0.02*	*0.04*	*<0.02*	*<0.1*	*<0.02*	0.02	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.17**	0.39	0.03	0.01
QLD_0861_PFAS	MW057S	06 Apr 2018	Normal	0.08	0.06	0.16	*<0.02*	*0.04*	*<0.02*	*<0.1*	0.04	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.2**	0.38	0.02	0.02
QLD_0861_PFAS	MW057S	14 May 2019	Normal	0.08	0.04	0.1	*<0.02*	*0.04*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.14**	0.26	-	-
QLD_0861_PFAS	MW057S	28 Nov 2019	Normal	0.12	0.05	0.09	*<0.02*	*0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.11**	0.28	-	-
QLD_0861_PFASOMP	MW057S	28 Apr 2020	Normal	0.02	*<0.02*	0.04	*<0.02*	*0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.06	0.08	-	-
QLD_0861_PFASOMP	MW057S	15 Oct 2020	Normal	0.09	0.05	0.07	*<0.02*	*0.04*	*<0.02*	*<0.10*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.11**	0.25	-	-
QLD_0861_PFASOMP	MW057S	21 Apr 2021	Normal	0.02	*<0.02*	0.05	*<0.02*	*0.03*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.08**	0.1	-	-
QLD_0861_PFASOMP	MW057S	26 Nov 2021	Normal	0.02	*<0.02*	0.04	*<0.02*	*0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.05	0.07	-	-
QLD_0861_PFASOMP	MW057S	04 Apr 2022	Normal	0.12	0.09	0.42	*<0.02*	*0.25*	*<0.02*	*<0.1*	0.02	0.09	0.02	0.04	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.67**	1.05	-	-
QLD_0861_PFASOMP	MW057S	04 Apr 2022	Interlab_D	0.099	0.075	0.38	*<0.01*	*0.12*	*<0.01*	*<0.05*	0.021	0.077	0.013	0.023	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW057S	04 Apr 2022	Field_D	0.14	0.12	0.48	*<0.02*	*0.28*	*<0.02*	*<0.1*	0.03	0.1	*<0.02*	0.05	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.76**	1.2	-	-
QLD_0861_PFASOMP	MW057S	26 Oct 2022	Normal	0.37	0.31	1.54	0.07	*1.03*	<0.02	0.1	0.06	0.33	0.05	0.11	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**2.57**	3.97	-	-
QLD_0861_PFASOMP_23	MW057S	19 Apr 2023	Normal	0.28	0.21	0.97	0.02	*0.28*	*<0.02*	**0.1**	0.04	0.19	0.03	0.06	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**1.25**	2.18	-	-
QLD_0861_PFASOMP_23	MW057S	19 Apr 2023	Interlab_D	0.25	0.18	0.81	*<0.01*	*0.17*	*<0.01*	**0.093**	0.031	0.15	0.024	0.039	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP_23	MW057S	19 Apr 2023	Field_D	0.29	0.25	0.9	0.03	*0.3*	*<0.02*	*<0.1*	0.04	0.15	0.04	0.07	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**1.2**	2.07	-	-
QLD_0861_PFAS	MW057I	22 Feb 2018	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
QLD_0861_PFAS	MW057I	06 Apr 2018	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
QLD_0861_PFAS	MW057I	06 Apr 2018	Interlab_D	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.05*	*<0.1*	*<0.5*	*<0.1*	*<0.05*	*<0.02*	*<0.05*	*<0.1*	*<0.02*	*<0.5*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFAS	MW057I	06 Apr 2018	Field_D	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
QLD_0861_PFAS	MW057I	14 May 2019	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.01	0.01	-	-
QLD_0861_PFAS	MW057I	14 May 2019	Field_D	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.01	0.01	-	-
QLD_0861_PFAS	MW057I	28 Nov 2019	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW057I	28 Apr 2020	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW057I	15 Oct 2020	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.10*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW057I	21 Apr 2021	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW057I	26 Nov 2021	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW057I	04 Apr 2022	Normal	*<0.02*	*<0.02*	0.01	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.01	0.01	-	-
QLD_0861_PFASOMP	MW057I	26 Oct 2022	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP_23	MW057I	19 Apr 2023	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFAS	MW056S	21 Feb 2018	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
QLD_0861_PFAS	MW056S	05 Apr 2018	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
QLD_0861_PFAS	MW056S	09 May 2019	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	-	-
QLD_0861_PFAS	MW056S	28 Nov 2019	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW056S	22 Apr 2020	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.02	0.02	-	-
QLD_0861_PFASOMP	MW056S	15 Oct 2020	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.10*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	-	-
QLD_0861_PFASOMP	MW056S	15 Apr 2021	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.01	0.01	-	-
QLD_0861_PFASOMP	MW056S	22 Oct 2021	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW056S	29 Mar 2022	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW056S	29 Mar 2022	Interlab_D	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	0.017	*<0.02*	0.02	*<0.01*	*<0.02*	0.039	*<0.05*	*<0.02*	0.044	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW056S	29 Mar 2022	Field_D	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFAS	MW056I	21 Feb 2018	Normal	*<0.

Table T2 Groundwater PFAS Analytical Results

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Perfluoroalkyl Sulfonamides							Fluorotelomer Sulfonic Acids				Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
	Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.001	0.001	0.001	0.001	0.0002	0.0002	0.002	0.002
HEPA 2020 Drinking Water Guideline Value												**0.56**																		**0.07**			
HEPA 2020 Freshwater 95% Guideline Value						*0.13*						*220*																					
HEPA 2020 Freshwater 99% Guideline Value						*0.00023*						*19*																					

Project ID	Location	Date	Type																														
QLD_0861_PFAS	MW055S	02 May 2019	Field_D	0.08	0.11	0.81	0.04	*0.46*	<0.02	<0.1	<0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**1.27**	1.59	-	-
QLD_0861_PFAS	MW055S	21 Nov 2019	Normal	0.1	0.12	0.9	0.07	*0.53*	<0.02	<0.1	<0.02	0.09	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**1.43**	1.86	-	-
QLD_0861_PFASOMP	MW055S	22 Apr 2020	Normal	0.1	0.12	0.7	0.06	*0.68*	<0.02	<0.1	<0.02	0.09	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	0.08	<0.05	<0.05	**1.38**	1.87	-	-
QLD_0861_PFASOMP	MW055S	14 Oct 2020	Normal	0.14	0.16	0.98	0.06	*1*	<0.02	<0.10	0.03	0.11	0.03	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**1.98**	2.58	-	-
QLD_0861_PFASOMP	MW055S	16 Apr 2021	Normal	<0.02	0.07	0.41	0.03	*0.4*	<0.02	<0.1	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.81**	0.91	-	-
QLD_0861_PFASOMP	MW055S	21 Oct 2021	Normal	0.05	0.05	0.3	<0.02	*0.18*	<0.02	<0.1	<0.02	0.05	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.48**	0.65	-	-
QLD_0861_PFASOMP	MW055S	01 Apr 2022	Normal	0.06	0.07	0.4	0.02	*0.32*	<0.02	<0.1	<0.02	0.06	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.72**	0.96	-	-
QLD_0861_PFASOMP	MW055S	20 Oct 2022	Normal	<0.02	<0.02	0.09	<0.02	*0.05*	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.14**	0.17	-	-
QLD_0861_PFASOMP_23	MW055S	11 May 2023	Normal	0.06	0.05	0.3	<0.02	*0.18*	<0.02	<0.1	<0.02	0.05	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.48**	0.66	-	-
QLD_0861_PFAS	MW055D	09 Mar 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	MW055D	06 Apr 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	MW055D	02 May 2019	Normal	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	-	-
QLD_0861_PFAS	MW055D	21 Nov 2019	Normal	<0.02	<0.02	<0.02	<0.02	*0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	0.86	<0.05	<0.05	0.01	0.87	-	-
QLD_0861_PFASOMP	MW055D	22 Apr 2020	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	0.52	<0.05	<0.05	<0.01	0.52	-	-
QLD_0861_PFASOMP	MW055D	14 Oct 2020	Normal	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.10	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	0.41	<0.05	<0.05	<0.02	0.41	-	-
QLD_0861_PFASOMP	MW055D	16 Apr 2021	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	0.19	<0.05	<0.05	<0.01	0.19	-	-
QLD_0861_PFASOMP	MW055D	21 Oct 2021	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	0.05	<0.05	<0.05	<0.01	0.05	-	-
QLD_0861_PFASOMP	MW055D	01 Apr 2022	Normal	<0.02	<0.02	0.02	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.04	0.04	-	-
QLD_0861_PFASOMP	MW055D	20 Oct 2022	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP_23	MW055D	11 May 2023	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFAS	MW054S	21 Feb 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	0.03	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	0.03	<0.01	<0.01
QLD_0861_PFAS	MW054S	05 Apr 2018	Normal	<0.02	<0.02	0.02	<0.02	*0.04*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	0.06	0.03	0.01
QLD_0861_PFAS	MW054S	09 May 2019	Normal	<0.02	<0.02	<0.02	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	-
QLD_0861_PFAS	MW054S	28 Nov 2019	Normal	<0.02	<0.02	<0.02	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	-
QLD_0861_PFASOMP	MW054S	24 Apr 2020	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	-
QLD_0861_PFASOMP	MW054S	24 Apr 2020	Interlab_D	<0.01	<0.01	0.061	<0.01	*0.08*	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	0.091	<0.01	<0.01	-	-	-	-
QLD_0861_PFASOMP	MW054S	24 Apr 2020	Field_D	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	<0.10	0.1	<0.10	<0.10	<0.10	0.1	-	-
QLD_0861_PFASOMP	MW054S	21 Apr 2021	Normal	<0.05	<0.02	<0.02	<0.02	*0.1*	<0.02	<0.2	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.1**	0.1	-	-
QLD_0861_PFASOMP	MW054S	28 Oct 2021	Normal	<0.05	<0.05	<0.05	<0.05	*0.07*	<0.05	<0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	0.07	0.07	-	-
QLD_0861_PFASOMP	MW054S	05 Apr 2022	Normal	<0.02	<0.02	0.08	<0.02	*0.16*	<0.02	<0.1	<0.02	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.24**	0.28	-	-
QLD_0861_PFASOMP	MW054S	09 Nov 2022	Normal	0.03	0.03	0.2	<0.02	*0.18*	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.38**	0.47	-	-
QLD_0861_PFASOMP_23	MW054S	26 Apr 2023	Normal	<0.04	0.02	0.16	<0.02	*0.19*	<0.02	<0.1	<0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.35**	0.38	-	-
QLD_0861_PFAS	MW054D	21 Feb 2018	Normal	<0.02	<0.02	<0.02	<0.02	*0.07*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	0.07	0.05	0.02
QLD_0861_PFAS	MW054D	05 Apr 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	MW054D	09 May 2019	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFAS	MW054D	09 May 2019	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.05	<0.1	<0.5	<0.1	<0.05	<0.02	<0.05	<0.1	<0.02	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-
QLD_0861_PFAS	MW054D	09 May 2019	Field_D	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFAS	MW054D	28 Nov 2019	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	MW054D	24 Apr 2020	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	0.5	<0.05	<0.05	<0.01	0.5	-	-
QLD_0861_PFASOMP	MW054D	23 Oct 2020	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	0.14	<0.05	<0.05	<0.01	0.14	-	-
QLD_0861_PFASOMP	MW054D	21 Apr 2021	Normal	<0.02	<0.02	<0.02	<0.02	*0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.01	0.01	-	-
QLD_0861_PFASOMP	MW054D	28 Oct 2021	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	MW054D	05 Apr 2022	Normal	<0.02	<0.02	<0.03	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	-	-
QLD_0861_PFASOMP	MW054D	09 Nov 2022	Normal	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	-	-
QLD_0861_PFASOMP_23	MW054D	26 Apr 2023	Normal	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFAS	MW053	21 Feb 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	MW052	06 Feb 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	MW051	17 Jan 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	MW050	05 Feb 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	MW050	30 Apr 2019	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFAS	MW050	25 Nov 2019	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	MW050	24 Apr 2020	Normal	<0.02	<0.02	<0.02	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	-
QLD_0861_PFASOMP	MW050	24 Apr 2020	Interlab_D	<0.01	<0.01	<0.01	<0.01	*0.024*	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	0.015	<0.01	<0.01	-	-	-	-
QLD_0861_PFASOMP	MW050	12 Oct 2020	Normal	<0.02	<0.02	<0.02	<0.02	*0.01*	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.01	0.01	-	-
QLD_0861_PFASOMP	MW050	21 Apr 2021	Normal	0.03	<0.02	0.07	<0.02	*0.23*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.3**	0.33	-	-
QLD_0861_PFASOMP	MW050	28 Oct 2021	Normal	0.02	<0.02	0.07	<0.02	*0.11*	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.18**	0.24	-	-
QLD_0861_PFASOMP	MW050	30 Mar 2022	Normal	<0.02	<0.02	0.01	<0.02	*0.07*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.08**	0.08	-	-
QLD_0861_PFASOMP	MW050	24 Oct 2022	Normal	<0.02	<0.02	0.07	<0.02	*0.1*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	**0.17**	0.17	-	-
QLD_0861_PFASOMP_23	MW050	17 Apr 2023	Normal	0.04	0.02	0.13	<0.02	*0.22*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.35**	0.41	-	-
QLD_0861_PFASOMP_23	MW050	17 Apr 2023	Interlab_D	0.028	0.014	0.084	<0.01	*0.16*	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	-	-	-	-
QLD_0861_PFASOMP_23	MW050	17 Apr 2023	Field_D	0.04	0.02	0.12	<0.02	*0.22*	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.34**	0.42	-	-
QLD_0861_PFAS	MW049	05 Feb 2018	Normal	4.05	2.76	19.2	0.94	*27.5*	<0.02	**1.5**	1.52	6.3	0.82	**1.68**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**46.7**	66.3	19.5	8
QLD_0861_PFAS	MW049	05 Feb 2018	Field_D	4.01	2.58	15.9	0.87	*24.2*	<0.02	**1.6**	1.6	6.65	0.88	**1.71**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**40.1**	60	16.8	7.4
QLD_0861_PFAS	MW049	05 Feb 2018	Field_D	3.91	2.63	17.6	0.86	*26.9*	<0.02	**1.5**	1.53	6.49	0.89	**1.76**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	0.06	<0.05	<0.05	**44.5**	64.1	18.7	8.2
QLD_0861_PFAS	MW049	30 Apr 2019	Normal	3.39	2.6	16.3	0.52	*27.2*	<0.02	**1.3**	1.35	5.05	0.53	**0.88**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**43.5**	59.1	-	-
QLD_0861_PFAS	MW049	18 Nov 2019	Normal	2.65	2.14	11.2	0.44	*21*	<0.02	**1.2**	1.11	4.04	0.48	**0.77**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**32.2**	45	-	-
QLD_0861_PFAS	MW049	18 Nov 2019	Field_D	2.67	2.09	11	0.41	*21.2*	<0.02	**1.1**	1.12	3.92	0.48	**0.78**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**32.2**	44.8	-	-
QLD_0861_PFAS	MW049	19

Table T2 Groundwater PFAS Analytical Results

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Perfluoroalkyl Sulfonamides							Fluorotelomer Sulfonic Acids				Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
	Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.001	0.001	0.001	0.001	0.0002	0.0002	0.002	0.002
HEPA 2020 Drinking Water Guideline Value												**0.56**																		**0.07**			
HEPA 2020 Freshwater 95% Guideline Value						*0.13*						*220*																					
HEPA 2020 Freshwater 99% Guideline Value						*0.00023*						*19*																					
Project ID	**Location**	**Date**	**Type**																														
QLD_0861_PFASOMP	MW048	21 Oct 2021	Normal	0.12	0.09	0.74	0.03	*1.6*	<0.02	<0.10	0.04	0.16	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**2.34**	2.82	-	-
QLD_0861_PFASOMP	MW048	29 Mar 2022	Normal	0.37	0.33	2.19	0.13	*2.96*	<0.02	<0.1	0.12	0.44	0.06	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**5.15**	6.73	-	-
QLD_0861_PFASOMP	MW048	25 Oct 2022	Normal	0.86	1.01	7.46	0.32	*13.4*	<0.10	<0.5	0.24	1.37	0.14	0.26	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	**20.9**	25.1	-	-
QLD_0861_PFASOMP_23	MW048	17 Apr 2023	Normal	0.39	0.45	2.97	0.16	*5.66*	<0.02	<0.1	0.14	0.45	0.08	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**8.63**	10.4	-	-
QLD_0861_PFAS	MW047	15 Jan 2018	Normal	0.03	<0.02	0.1	<0.02	*0.41*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.51**	0.54	0.31	0.1
QLD_0861_PFAS	MW047	06 Apr 2018	Normal	<0.02	<0.02	0.07	<0.02	*0.23*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.3**	0.3	0.19	0.04
QLD_0861_PFAS	MW047	02 May 2019	Normal	<0.02	<0.02	<0.02	<0.02	*0.03*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.03	0.03	-	-
QLD_0861_PFAS	MW047	21 Nov 2019	Normal	0.02	<0.02	0.03	<0.02	*0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.04	0.06	-	-
QLD_0861_PFASOMP	MW047	23 Apr 2020	Normal	0.75	0.9	7.67	0.42	*5.87*	<0.04	<0.2	0.2	1.05	0.13	0.26	<0.04	<0.04	<0.04	<0.04	<0.04	<0.1	<0.04	<0.1	<0.04	<0.1	<0.1	<0.04	<0.1	<0.05	<0.05	<0.05	<0.05	**13.5**	17.2	-	-
QLD_0861_PFASOMP	MW047	23 Apr 2020	Interlab_D	0.65	0.62	5.4	0.32	*3.5*	<0.01	**0.13**	0.17	0.86	0.092	0.2	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	-	-	-	-
QLD_0861_PFASOMP	MW047	23 Apr 2020	Field_D	0.82	0.79	7.08	0.37	*6.17*	<0.03	<0.2	0.17	0.99	0.12	0.26	<0.03	<0.03	<0.03	<0.03	<0.03	<0.08	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	<0.05	<0.05	<0.05	<0.05	**13.2**	16.8	-	-
QLD_0861_PFASOMP	MW047	12 Oct 2020	Normal	0.11	0.08	0.64	0.02	*0.89*	<0.02	<0.10	0.02	0.09	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**1.53**	1.87	-	-
QLD_0861_PFASOMP	MW047	12 Oct 2020	Interlab_D	0.1	0.08	0.74	0.026	*0.87*	<0.01	<0.05	0.022	0.1	0.011	0.018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	-	-	-	-
QLD_0861_PFASOMP	MW047	12 Oct 2020	Field_D	0.11	0.1	0.76	0.03	*0.95*	<0.02	<0.10	0.03	0.12	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**1.71**	2.12	-	-
QLD_0861_PFASOMP	MW047	20 Apr 2021	Normal	0.22	0.19	0.18	0.08	*2.46*	<0.02	**0.2**	0.19	0.24	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**2.64**	3.8	-	-
QLD_0861_PFASOMP	MW047	20 Apr 2021	Interlab_D	0.21	0.1	1	0.05	*1.8*	<0.01	**0.19**	0.14	0.16	0.01	0.025	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	-	-	-	-
QLD_0861_PFASOMP	MW047	20 Apr 2021	Field_D	0.07	0.04	0.2	<0.02	*0.44*	<0.02	<0.1	0.03	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.64**	0.82	-	-
QLD_0861_PFASOMP	MW047	26 Oct 2021	Normal	1.58	0.67	3.58	0.23	*5.21*	<0.02	**0.72**	0.82	1.58	0.03	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**8.79**	14.5	-	-
QLD_0861_PFASOMP	MW047	30 Mar 2022	Normal	0.86	0.64	4.01	0.16	*2.84*	<0.02	**0.3**	0.4	1.03	0.1	0.17	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	0.06	<0.05	<0.05	**6.85**	10.6	-	-
QLD_0861_PFASOMP	MW047	30 Mar 2022	Interlab_D	1.1	1.6	19	1.1	*30*	<0.01	**0.3**	0.52	2.2	0.52	**1.5**	0.035	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	0.032	0.015	<0.01	-	-	-	-
QLD_0861_PFASOMP	MW047	30 Mar 2022	Field_D	1.51	2.88	20.9	1.64	*50.2*	<0.05	**0.4**	0.64	2.73	0.93	**2.37**	0.08	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	**71.1**	84.3	-	-
QLD_0861_PFASOMP	MW047	25 Oct 2022	Normal	1.45	1.39	10.3	0.52	*6.38*	<0.02	**0.5**	0.6	2.64	0.24	0.52	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	**16.7**	24.5	-	-
QLD_0861_PFASOMP_23	MW047	19 Apr 2023	Normal	1.03	1.28	6.55	0.43	*4.24*	<0.02	**0.4**	0.6	1.44	0.15	0.32	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**10.8**	16.4	-	-
QLD_0861_FSBGME	MW046	25 Jun 2019	Normal	16	18	160	11	*360*	<0.1	**14**	28	76	16	***36***	0.85	0.14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.09	37	3.7	<0.1	**520**	784.48	-	-
QLD_0861_PFASOMP	MW046	27 Apr 2020	Normal	18.6	17.4	122	9.24	*251*	<1.62	<8.1	27.6	62	13	***32.4***	<1.62	<1.62	<1.62	<1.62	<1.62	<4.05	<1.62	<4.05	<1.62	<4.05	<4.05	<1.62	<4.05	<1.62	41.2	2.92	<1.62	**373**	597	-	-
QLD_0861_PFASOMP	MW046	19 Oct 2020	Normal	18.8	21.2	146	10.5	*219*	<0.44	**16.6**	33.9	85.4	17.1	***39.1***	0.62	<0.44	<0.44	<0.44	<0.44	<1.11	<0.44	<1.11	<0.44	<1.11	<1.11	<0.44	<1.11	<0.44	43.8	1.74	<0.44	**365**	654	-	-
QLD_0861_PFASOMP	MW046	19 Oct 2020	Interlab_D	14	13	110	6.3	*160*	<0.01	**14**	29	56	12	***27***	0.53	0.074	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	0.1	36	1.7	<0.01	-	-	-	-
QLD_0861_PFASOMP	MW046	19 Oct 2020	Field_D	18.9	20	139	11.8	*242*	<0.18	**16**	30.2	79.8	15.8	***37.2***	0.64	<0.18	<0.18	<0.18	<0.18	<0.45	<0.18	<0.45	<0.18	<0.45	<0.45	<0.18	<0.45	<0.18	41.2	2.08	<0.18	**381**	655	-	-
QLD_0861_PFASOMP	MW046	20 Apr 2021	Normal	18.5	29.1	127	13.6	*293*	<0.05	**14.7**	39.5	69.7	18.9	***40.3***	0.72	0.09	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	0.09	38.5	2.98	<0.05	**420**	707	-	-
QLD_0861_PFASOMP	MW046	26 Oct 2021	Normal	12.5	11.6	83.4	6.7	*194*	<0.50	**11.6**	25.9	50	9.55	***21.7***	<0.50	<0.50	<0.50	<0.50	<0.50	<1.25	<0.50	<1.25	<0.50	<1.25	<1.25	<0.50	<1.25	<0.50	33.6	1.75	<0.50	**277**	462	-	-
QLD_0861_PFASOMP	MW046	30 Mar 2022	Normal	12.3	11.8	85	7.15	*179*	<0.25	**13**	28	45.4	9.28	***22.1***	0.42	<0.25	<0.25	<0.25	<0.25	<0.62	<0.25	<0.62	<0.25	<0.62	<0.62	<0.25	<0.62	<0.25	34.5	1.6	<0.25	**264**	450	-	-
QLD_0861_PFASOMP	MW046	25 Oct 2022	Normal	13.9	16.5	120	12.6	*215*	<0.25	**17.8**	34.9	74.8	12.7	***31.6***	0.66	<0.25	<0.25	<0.25	<0.25	<0.63	<0.25	<0.63	<0.25	<0.63	<0.63	<0.25	<0.63	<0.25	34.6	1.74	<0.25	**335**	587	-	-
QLD_0861_PFASOMP_23	MW046	17 Apr 2023	Normal	4.42	4.85	34.2	3.78	*87.1*	<0.25	**5.5**	12.5	16.9	3.9	**7.75**	0.25	<0.25	<0.25	<0.25	<0.25	<0.62	<0.25	<0.62	<0.25	<0.62	<0.62	<0.25	<0.62	<0.25	13.9	0.8	<0.25	**121**	196	-	-
QLD_0861_FSBGME	MW045	25 Jun 2019	Normal	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.05	<0.01	<0.01	<0.01	<0.1	-	-
QLD_0861_PFAS	MW044	06 Feb 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	MW044	07 May 2019	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFAS	MW044	27 Nov 2019	Normal	0.03	<0.02	0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	0.05	-	-
QLD_0861_PFASOMP	MW044	22 Apr 2020	Normal	<0.02	<0.02	<0.02	<0.02	***0.01***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	0.13	<0.05	<0.05	0.01	0.14	-	-
QLD_0861_PFASOMP	MW044	15 Oct 2020	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	MW044	21 Apr 2021	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	MW044	21 Oct 2021	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	MW044	01 Apr 2022	Normal	<0.02	<0.02	0.01	<0.02	<0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.01	0.01	-	-
QLD_0861_PFASOMP	MW044	01 Apr 2022	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	-	-	-	-
QLD_0861_PFASOMP	MW044	01 Apr 2022	Field_D	<0.02	<0.02	<0.01	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	-
QLD_0861_PFASOMP	MW044	26 Oct 2022	Normal	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<1.2	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.63	<0.25	<0.63	<0.25	<0.63	<0.63	<0.25	<0.63	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	-	-
QLD_0861_PFASOMP	MW044	26 Oct 2022	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	-	-	-	-
QLD_0861_PFASOMP	MW044	26 Oct 2022	Field_D	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<1.2	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.63	<0.25	<0.63	<0.25	<0.63	<0.63	<0.25	<0.63	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	-	-
QLD_0861_PFASOMP_23	MW044	11 May 2023	Normal	<0.02	<0.02	0.02	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.04	0.04	-	-
QLD_0861_PFAS	MW043	22 Feb 2018	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01
QLD_0861_PFAS	MW043	22 Feb 2018	Field_D	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01
QLD_0861_PFAS	MW043	03 May 2019	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	-
QLD_0861_PFAS	MW043	26 Nov 2019	Normal	<0.02	<0.02	0.05	<0.02	*0.1*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	0.06	<0.05	<0.05	**0.15**	0.21	-	-
QLD_0861_PFASOMP	MW043	28 Apr 2020	Normal	<0.02	<0.02	<0.02	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	-
QLD_0861_PFASOMP	MW043	16 Oct 2020	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.50	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	-
QLD_0861_PFASOMP	MW043	15 Apr 2021	Normal	<0.02	<0.02	<0.02	<0.02	***0.01***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.01	0.01	-	-
QLD_0861_PFASOMP	MW043	26 Oct 2021	Normal	0.36	0.08	0.22	<0.02	*0.27*	<0.02	**0.1**	0.08	0.21	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.49**	1.34	-	-
QLD_0861_PFASOMP	MW043	05 Apr 2022	Normal	0.28	0.09	0.21	<0.02	*0.18*	<0.02	<0.1	0.08	0.14	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	**0.39**	0.98	-	-
QLD_0861_PFASOMP	MW043	25 Oct 2022	Normal	0.04	<0.02	0.05	<0.02	*0.05*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	**0.1**	0.14	-	-
QLD_0861_PFASOMP	MW043	25 Oct 2022	Interlab_D	0.043	0.012	0.047	<0.01	*0.048*	<0.01	<0.05	<0.02	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	-	-	-	-
QLD_0861_PFASOMP	MW043	25 Oct 2022	Field_D	0.06	<0.02	0.08	<0.02	*0.06*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	**0.14**	0.2	-	-
QLD_0861_PFASOMP_23	MW043	27 Apr 2023	Normal	0.2	0.07	0.3	<0.02	*0.4*	<0.02	<0.1	0.05	0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**0.7**	1.14	-	-
QLD_0861_PFAS	MW042	06 Feb 2018	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01
QLD_0861_PFAS	MW042	07 Feb 2018	Normal	11.1	13.9	96.6	9.66	*201*	<0.10	**7.7**	16.3	46.1	11.9	***23.7***	0.56	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	<0.10	15.8	1.59	<0.10	**298**	456	87.6	113
QLD_0861_PFAS	MW042	03 May 2019	Normal	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	-	-
QLD_0861_PFAS	MW042	06 May 2019	Normal	16.7	17.2	129	9.86	*288*	<0.20	**15.7**	29.2	69.5	13.9	***31.5***	0.74	<0.20	<0.20	<0.20	<0.20	<0.50	<0.20	<0.50	<0.20	<0.50	<0.50	<0.20	<0.50	<0.20	38.8	3	<0.20	**417**	663	-	-
QLD_0861_PFAS	MW042	18 Nov 2019	Normal	18.1	19.4	130	8.65	*200*	<0.02	**16.2**	29.8	67.4	12.8	***38***	0.71	0.12	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.11	7.83	2.31	<0.05	**330**	551	-	-
QLD_0861_PFAS	MW042	26 Nov 2019	Normal	<0.02	<0.02	<0.02	<0.02	***0.01***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	0.06	<0.05	<0.05	0.01	0.07	-	-
QLD_0861_PFASOMP	MW042	28 Apr 2020	Normal	<0.02	<0.02	<0.02	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	0.07	<0.05	<0.05	0.02	0.09	-	-
QLD_0861_PFASOMP	MW042	16 Oct 2020

Table T2 Groundwater PFAS Analytical Results

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Perfluoroalkyl Sulfonamides							Fluorotelomer Sulfonic Acids				Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
	Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.001	0.001	0.001	0.001	0.0002	0.0002	0.002	0.002
HEPA 2020 Drinking Water Guideline Value												**0.56**																		**0.07**			
HEPA 2020 Freshwater 95% Guideline Value						*0.13*						*220*																					
HEPA 2020 Freshwater 99% Guideline Value						*0.00023*						*19*																					

Project ID	Location	Date	Type																														
QLD_0861_PFASOMP	MW041	23 Apr 2020	Normal	0.08	*<0.02*	*<0.02*	*<0.02*	*0.03*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.03	0.11	-	-
QLD_0861_PFASOMP	MW041	14 Oct 2020	Normal	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.50*	*<0.11*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.25*	*<0.10*	*<0.25*	*<0.10*	*<0.25*	*<0.25*	*<0.10*	*<0.25*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	-	-
QLD_0861_PFASOMP	MW041	22 Oct 2021	Normal	0.08	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	0.07	0.04	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	0.19	-	-
QLD_0861_PFASOMP	MW041	05 Apr 2022	Normal	0.31	0.05	0.14	*<0.02*	*0.3*	*<0.02*	*<0.3*	0.37	0.21	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.44**	1.38	-	-
QLD_0861_PFASOMP	MW041	25 Oct 2022	Normal	0.1	*<0.02*	0.04	*<0.02*	*0.08*	*<0.02*	**0.2**	0.11	0.06	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	0.02	0.03	0.1	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.12**	0.74	-	-
QLD_0861_PFASOMP_23	MW041	19 Apr 2023	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.01*	-	-
QLD_0861_PFAS	MW040	08 Feb 2018	Normal	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.2*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*
QLD_0861_PFAS	MW039	15 Jan 2018	Normal	0.32	0.16	0.23	*<0.02*	*0.23*	*<0.02*	*<0.1*	0.09	0.3	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.46**	1.33	0.16	0.07
QLD_0861_PFAS	MW039	15 Jan 2018	Field_D	0.35	0.21	0.28	*<0.02*	*0.05*	*<0.02*	*<0.1*	0.1	0.35	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.33**	1.34	0.04	0.01
QLD_0861_PFAS	MW039	30 Apr 2019	Normal	0.6	0.36	0.6	*<0.02*	*<0.01*	*<0.02*	*<0.1*	0.12	0.62	0.03	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.6**	2.33	-	-
QLD_Hist_202012-3	MW037	24 Feb 2017	Normal	2.98	1.58	3.7	*<0.02*	*0.02*	*<0.02*	*<0.1*	0.16	0.57	0.04	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**3.72**	9.05	-	-
QLD_Hist_202012-3	MW037	11 Oct 2017	Normal	3.48	2.72	7.57	*<0.02*	*0.03*	*<0.02*	*<0.1*	0.23	1.47	0.19	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**7.6**	15.7	-	-
QLD_Hist_202012-3	MW037	11 Oct 2017	Field_D	3.18	2.54	6.95	*<0.02*	*0.03*	*<0.02*	*<0.1*	0.25	1.43	0.17	0.02	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**6.98**	14.6	-	-
QLD_Hist_202012-3	MW037	11 Oct 2017	Field_D	2.38	2.43	15	0.94	*51.7*	*<0.02*	**0.4**	0.68	3.16	0.62	**1.1**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	0.28	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.25	*<0.05*	*<0.05*	**66.7**	78.9	-	-
QLD_0861_PFAS	MW037	08 May 2019	Normal	2.74	2.09	6.5	*<0.02*	*0.04*	*<0.02*	*<0.1*	0.28	1.76	0.18	0.04	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**6.54**	13.6	-	-
QLD_0861_PFAS	MW037	19 Nov 2019	Normal	2.31	1.96	5.81	*<0.02*	*0.01*	*<0.02*	**0.2**	0.29	1.41	0.16	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**5.82**	12.2	-	-
QLD_0861_PFASOMP	MW037	22 Apr 2020	Normal	1.96	1.71	4.6	*<0.04*	*<0.04*	*<0.04*	*<0.2*	0.2	1.24	0.13	*<0.04*	*<0.04*	*<0.04*	*<0.04*	*<0.04*	*<0.04*	*<0.09*	*<0.04*	*<0.09*	*<0.04*	*<0.09*	*<0.09*	*<0.04*	*<0.09*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**4.6**	9.84	-	-
QLD_0861_PFASOMP	MW037	22 Apr 2020	Interlab_D	1.5	1.2	3.8	*<0.01*	*0.025*	*<0.01*	**0.15**	0.19	1.1	0.11	0.02	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW037	12 Oct 2020	Normal	2.01	1.42	4.25	*<0.02*	*0.03*	*<0.02*	*<0.10*	0.2	1.08	0.13	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**4.28**	9.15	-	-
QLD_0861_PFASOMP	MW037	20 Apr 2021	Normal	1.38	1.46	3.57	*<0.02*	*0.06*	*<0.02*	*<0.1*	0.18	0.9	0.12	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**3.63**	7.7	-	-
QLD_0861_PFASOMP	MW037	27 Oct 2021	Normal	1.45	1.24	3.78	*<0.02*	*0.02*	*<0.02*	**0.1**	0.16	0.97	0.1	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**3.8**	7.85	-	-
QLD_0861_PFASOMP	MW037	30 Mar 2022	Normal	0.55	0.4	1.75	0.07	*2.51*	*<0.02*	*<0.1*	0.08	0.42	0.05	0.08	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**4.26**	5.91	-	-
QLD_0861_PFASOMP	MW037	24 Oct 2022	Normal	1.43	1.26	3.91	*<0.02*	*0.41*	*<0.02*	**0.1**	0.17	1.15	0.1	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**4.32**	8.56	-	-
QLD_0861_PFASOMP_23	MW037	19 Apr 2023	Normal	2.24	2.53	6.26	0.08	*0.56*	*<0.02*	**0.2**	0.41	1.83	0.27	0.12	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**6.82**	14.5	-	-
QLD_Hist_202012-3	MW036	28 Feb 2017	Normal	*<0.02*	*<0.02*	0.02	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.02	0.02	-	-
QLD_Hist_202012-3	MW036	12 Oct 2017	Normal	*<0.02*	*<0.02*	0.03	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.03	0.03	-	-
QLD_0861_PFAS	MW036	07 May 2019	Normal	*<0.02*	*<0.02*	0.03	*<0.02*	*0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.05	0.05	-	-
QLD_0861_PFAS	MW036	27 Nov 2019	Normal	*<0.02*	*<0.02*	0.03	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.03	0.03	-	-
QLD_0861_PFASOMP	MW036	22 Apr 2020	Normal	*<0.02*	*<0.02*	0.03	*<0.02*	*0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.04	0.04	-	-
QLD_0861_PFASOMP	MW036	15 Oct 2020	Normal	*<0.02*	*<0.02*	0.03	*<0.02*	*<0.01*	*<0.02*	*<0.10*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.03	0.03	-	-
QLD_0861_PFASOMP	MW036	16 Apr 2021	Normal	*<0.02*	*<0.02*	0.04	*<0.02*	*0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.06	0.06	-	-
QLD_0861_PFASOMP	MW036	21 Oct 2021	Normal	*<0.02*	*<0.02*	0.03	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.03	0.03	-	-
QLD_0861_PFASOMP	MW036	04 Apr 2022	Normal	*<0.02*	*<0.02*	0.04	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.04	0.04	-	-
QLD_0861_PFASOMP	MW036	25 Oct 2022	Normal	*<0.02*	*<0.02*	0.04	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.04	0.04	-	-
QLD_0861_PFASOMP	MW036	25 Oct 2022	Interlab_D	*<0.01*	*<0.01*	0.03	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW036	25 Oct 2022	Field_D	*<0.02*	*<0.02*	0.04	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.04	0.04	-	-
QLD_0861_PFASOMP_23	MW036	19 Apr 2023	Normal	*<0.02*	*<0.02*	0.02	*<0.02*	*0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.03	0.03	-	-
QLD_Hist_202012-3	MW035	01 Mar 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	MW035	13 Oct 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFAS	MW035	01 May 2019	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFAS	MW035	21 Nov 2019	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW035	22 Apr 2020	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW035	14 Oct 2020	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.10*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW035	16 Apr 2021	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW035	21 Oct 2021	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW035	04 Apr 2022	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW035	09 Nov 2022	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP_23	MW035	09 May 2023	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	MW034	01 Mar 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFAS	MW034	10 May 2019	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.01	0.01	-	-
QLD_0861_PFAS	MW034	20 Nov 2019	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW034	20 Nov 2019	Field_D	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFAS	MW034	21 Nov 2019	Interlab_D	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.1*	*<0.5*	*<0.1*	*<0.05*	*<0.02*	*<0.05*	*<0.1*	*<0.02*	*<0.5*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	0.01	-	-
QLD_0861_PFAS	MW034	21 Nov 2019	Interlab_D	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.1*	*<0.5*	*<0.1*	*<0.05*	*<0.02*	*<0.05*	*<0.1*	*<0.02*	*<0.5*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-
QLD_0861_PFAS	MW034	02 Dec 2019	Normal	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*0.0038*	*<0.0005*	*<0.0020*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.001*	*<0.0005*	*<0.001*	*<0.001*	*<0.0005*	*<0.001*	*<0.001*	*<0.001*	*<0.001*	0.002	*<0.001*	*<0.001*	0.0038	0.0058	-	-
QLD_0861_PFASOMP	MW034	23 Apr 2020	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*0.21*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.21**	0.21	-	-
QLD_0861_PFASOMP	MW034	23 Apr 2020	Interlab_D	*<0.01*	*<0.01*	0.013	*<0.01*	*0.23*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW034	13 Oct 2020	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.10*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW034	13 Oct 2020	Interlab_D	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW034	13 Oct 2020	Field_D	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.10*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW034

Table T2 Groundwater PFAS Analytical Results

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Perfluoroalkyl Sulfonamides							Fluorotelomer Sulfonic Acids				Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
	Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.001	0.001	0.001	0.001	0.0002	0.0002	0.002	0.002
HEPA 2020 Drinking Water Guideline Value												**0.56**																		**0.07**			
HEPA 2020 Freshwater 95% Guideline Value						*0.13*						*220*																					
HEPA 2020 Freshwater 99% Guideline Value						*0.00023*						*19*																					
Project ID	**Location**	**Date**	**Type**																														
QLD_0861_PFASOMP	MW033	26 Oct 2022	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.02	0.02	-	-
QLD_0861_PFASOMP_23	MW033	22 May 2023	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.02	0.02	-	-
QLD_Hist_202012-3	MW032	30 Aug 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW032	24 Feb 2017	Normal	2.55	1.55	7.38	0.59	*21.5*	*<0.02*	*<0.1*	0.56	1.86	0.33	**1.05**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.08	*<0.05*	*<0.05*	**28.9**	37.4	-	-
QLD_Hist_202012-3	MW032	17 Oct 2017	Normal	1.76	1.67	7.65	0.93	*23.1*	*<0.02*	**0.2**	0.79	3.58	1.04	**2.77**	0.06	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.11	*<0.05*	*<0.05*	**30.8**	43.7	-	-
QLD_0861_PFAS	MW032	02 May 2019	Normal	1.48	1.37	8.06	0.68	*17*	*<0.02*	**0.5**	0.6	3.34	0.83	**1.63**	0.04	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.07	*<0.05*	*<0.05*	**25.1**	35.6	-	-
QLD_0861_PFAS	MW032	19 Nov 2019	Normal	1.6	1.49	8.92	0.74	*15.9*	*<0.02*	**0.6**	0.7	3.63	0.97	**1.94**	0.06	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.11	*<0.05*	*<0.05*	**24.8**	36.7	-	-
QLD_0861_PFASOMP	MW032	27 Apr 2020	Normal	1.7	1.57	9.04	0.81	*20.8*	*<0.07*	*<0.3*	0.61	3.43	0.92	**1.92**	*<0.07*	*<0.07*	*<0.07*	*<0.07*	*<0.17*	*<0.07*	*<0.17*	*<0.07*	*<0.17*	*<0.17*	*<0.07*	*<0.17*	*<0.07*	*<0.07*	*<0.07*	*<0.07*	**29.8**	40.8	-	-
QLD_0861_PFASOMP	MW032	12 Oct 2020	Normal	1.62	1.56	8.95	0.78	*18.7*	*<0.05*	**0.72**	0.76	3.95	0.9	**2.01**	0.06	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	0.1	*<0.05*	*<0.05*	**27.6**	40.1	-	-
QLD_0861_PFASOMP	MW032	21 Apr 2021	Normal	1.72	1.85	8.64	0.93	*23.2*	**0.03**	**0.5**	0.8	3.88	1.04	**2.13**	0.07	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.08	*<0.05*	*<0.05*	**31.8**	44.9	-	-
QLD_0861_PFASOMP	MW032	21 Apr 2021	Interlab_D	1.6	1.3	5.9	0.55	*13*	*<0.01*	**0.58**	0.6	2.2	0.7	**1.6**	0.048	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	0.062	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW032	21 Apr 2021	Field_D	1.82	1.79	8.5	0.98	*22.8*	*<0.02*	**0.6**	0.83	3.4	1.08	**2.2**	0.06	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.09	*<0.05*	*<0.05*	**31.3**	44.2	-	-
QLD_0861_PFASOMP	MW032	25 Oct 2021	Normal	1.68	1.5	9.21	0.86	*24*	*<0.10*	*<0.5*	0.76	4.36	0.98	**2.27**	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.25*	*<0.10*	*<0.25*	*<0.10*	*<0.25*	*<0.25*	*<0.10*	*<0.25*	*<0.10*	0.13	*<0.10*	*<0.10*	**33.2**	45.8	-	-
QLD_0861_PFASOMP	MW032	25 Oct 2021	Interlab_D	1.5	1.4	8.4	0.68	*18*	*<0.01*	**0.6**	0.73	3.2	0.73	**1.6**	0.062	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	0.11	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW032	25 Oct 2021	Field_D	1.65	1.57	9.19	0.81	*23.6*	*<0.10*	*<0.5*	0.77	4.41	0.96	**2.21**	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.25*	*<0.10*	*<0.25*	*<0.25*	*<0.10*	*<0.25*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	**32.8**	45.2	-	-
QLD_0861_PFASOMP	MW032	06 Apr 2022	Normal	2.21	2.07	10.2	0.92	*24.6*	*<0.02*	**0.7**	0.86	4.23	1.11	**2.67**	0.06	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	*<0.05*	0.08	*<0.05*	*<0.05*	**34.8**	49.7	-	-
QLD_0861_PFASOMP	MW032	24 Oct 2022	Normal	1.69	1.89	9.52	1.47	*27.9*	*<0.02*	**0.6**	0.72	4.3	0.89	**2.23**	0.06	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.08	*<0.05*	*<0.05*	**37.4**	51.4	-	-
QLD_0861_PFASOMP_23	MW032	27 Apr 2023	Normal	1.59	1.53	7.86	0.87	*19.9*	*<0.02*	**0.7**	0.8	3.29	0.85	**1.86**	0.06	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	*<0.05*	*<0.11*	*<0.05*	*<0.05*	**27.8**	39.3	-	-
QLD_Hist_202012-3	MW031	29 Aug 2013	Normal	-	-	-	-	*0.76*	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW031	29 Aug 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW031	27 Feb 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	MW031	27 Feb 2017	Interlab_D	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	-	-	-	-
QLD_Hist_202012-3	MW031	27 Feb 2017	Field_D	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	MW031	18 Oct 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*0.03*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.03	0.03	-	-
QLD_0861_PFAS	MW031	10 May 2019	Normal	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.2*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	0.15	*<0.05*	*<0.05*	*<0.05*	0.15	-	-
QLD_0861_PFAS	MW031	10 May 2019	Interlab_D	*<0.01*	*<0.01*	0.01	*<0.01*	*0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.05*	*<0.1*	*<0.5*	*<0.1*	*<0.05*	*<0.02*	*<0.05*	*<0.1*	*<0.02*	*<0.5*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	0.02	0.02	-	-
QLD_0861_PFAS	MW031	10 May 2019	Field_D	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.2*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	-	-
QLD_0861_PFAS	MW031	20 Nov 2019	Normal	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.2*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	-	-
QLD_0861_PFASOMP	MW031	22 Apr 2020	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW031	22 Apr 2020	Interlab_D	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW031	13 Oct 2020	Normal	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.25*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	-	-
QLD_0861_PFASOMP	MW031	13 Apr 2021	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.02	0.02	-	-
QLD_0861_PFASOMP	MW031	21 Oct 2021	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW031	01 Apr 2022	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW031	25 Oct 2022	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	-	-
QLD_0861_PFASOMP_23	MW031	26 Apr 2023	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	MW030	27 Feb 2017	Normal	0.2	0.11	0.32	*<0.02*	*<0.01*	*<0.02*	*<0.1*	0.04	0.13	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.32**	0.8	-	-
QLD_Hist_202012-3	MW030	18 Oct 2017	Normal	0.57	0.81	1.6	0.03	*0.04*	*<0.02*	*<0.1*	0.19	1.29	0.37	0.23	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**1.64**	5.13	-	-
QLD_0861_PFAS	MW030	10 May 2019	Normal	1.14	0.83	2.59	*<0.10*	*<0.10*	*<0.10*	*<0.5*	0.36	2.52	0.4	0.27	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.25*	*<0.10*	*<0.25*	*<0.10*	*<0.25*	*<0.25*	*<0.10*	*<0.25*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	**2.59**	8.11	-	-
QLD_0861_PFAS	MW030	20 Nov 2019	Normal	1.07	0.85	2.75	*<0.10*	*<0.10*	*<0.10*	*<0.5*	0.22	2.31	0.36	0.2	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.25*	*<0.10*	*<0.25*	*<0.10*	*<0.25*	*<0.25*	*<0.10*	*<0.25*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	**2.75**	7.76	-	-
QLD_0861_PFASOMP	MW030	22 Apr 2020	Normal	1.24	1.01	2.69	0.04	*0.03*	*<0.02*	**0.4**	0.41	2.51	0.39	0.26	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**2.72**	8.98	-	-
QLD_0861_PFASOMP	MW030	13 Oct 2020	Normal	1.48	1.03	2.91	*<0.10*	*<0.10*	*<0.10*	*<0.50*	0.57	2.68	0.49	0.32	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.25*	*<0.10*	*<0.25*	*<0.10*	*<0.25*	*<0.25*	*<0.10*	*<0.25*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	**2.91**	9.48	-	-
QLD_0861_PFASOMP	MW030	13 Apr 2021	Normal	1.45	1.1	2.96	0.05	*<0.06*	*<0.02*	**0.4**	0.61	2.84	0.46	0.31	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.08	*<0.05*	*<0.05*	**2.96**	10.3	-	-
QLD_0861_PFASOMP	MW030	21 Oct 2021	Normal	1.79	1.27	3.38	0.03	*0.03*	*<0.02*	**0.5**	0.78	4.28	0.52	0.31	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**3.41**	12.9	-	-
QLD_0861_PFASOMP	MW030	01 Apr 2022	Normal	2.97	2.2	5.31	*<0.07*	*0.12*	*<0.02*	**0.7**	1.14	6.31	0.88	**0.57**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**5.43**	20.2	-	-
QLD_0861_PFASOMP	MW030	25 Oct 2022	Normal	5.49	4.49	11.4	0.22	*0.16*	*<0.02*	**1.5**	2.01	13.2	1.83	**1.19**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**11.6**	41.5	-	-
QLD_0861_PFASOMP_23	MW030	22 May 2023	Normal	4.66	4.62	12.7	0.21	*0.24*	*<0.02*	**1.2**	1.88	9.86	1.76	**1.37**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**12.9**	38.5	-	-
QLD_Hist_202012-3	MW029	29 Aug 2013	Normal	-	-	-	-	*0.7*	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW029	01 Mar 2017	Normal	0.34	0.3	2.26	0.12	*2.03*	*<0.02*	*<0.1*	0.05	0.29	0.04	0.06	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**4.29**	5.49	-	-
QLD_Hist_202012-3	MW029	12 Oct 2017	Normal	0.44	0.49	3.07	0.1	*3.03*	*<0.02*	*<0.1*	0.12	0.47	0.07	0.15	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**6.1**	7.94	-	-
QLD_0861_PFAS	MW029	07 May 2019	Normal	0.38	0.37	2.67	0.18	*3.12*	*<0.02*	*<0.1*	0.08	0.44	0.07	0.14	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**5.79**	7.45	-	-
QLD_0861_PFAS	MW029	27 Nov 2019	Normal	0.44	0.47	3.26	0.21	*3.98*	*<0.02*	*<0.1*	0.1	0.47	0.1	0.14	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**7.24**	9.17	-	-
QLD_0861_PFASOMP	MW029	22 Apr 2020	Normal	0.55	0.64	3.72	0.28	*3.33*	*<0.02*	*<0.1*	0.12	0.6	0.11	0.19	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**7.05**	9.54	-	-
QLD_0861_PFASOMP	MW029	15 Oct 2020	Normal	0.77	0.75	4.66	0.32	*4.25*	*<0.02*	*<0.10*	0.19	0.87	0.16	0.27	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**8.91**	12.2	-	-
QLD_0861_PFASOMP	MW029	16 Apr 2021	Normal	0.55	0.68	3.98	0.3	*4.29*	*<0.02*	**0.1**	0.15	0.71	0.12	0.2	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**8.27**	11.1	-	-
QLD_0861_PFASOMP	MW029	21 Oct 2021	Normal	0.76	0.75	5.39	0.38	*4.53*	*<0.02*	*<0.1*	0.18	0.98	0.14	0.27	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**9.92**	13.4	-	-
QLD_0861_PFASOMP	MW029	04 Apr 2022	Normal	0.83	1.02	5.11	0.5	*6.04*	*<0.02*	*<0.2*	0.2	0.92	0.17	0.32	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**11.2**	15.1	-	-
QLD_0861_PFASOMP	MW029	26 Oct 2022	Normal	0.78	0.97	6.14	0.56	*5.63*	*<0.02*	**0.1**	0.2	1.11	0.18	0.29	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**11.8**	16	-	-
QLD_0861_PFASOMP_23	MW029	19 Apr 2023	Normal	0.71	0.94	5.27	0.38	*4.29*	*<0.02*	**0.2**	0.21	0.88	0.16	0.26	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**9.56**	13.3	-	-
QLD_Hist_202012-3	MW028	29 Aug 2013	Normal	-	-	-	-	*40.6*	-	-	-	-	-	**2.45**	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW028	01 Mar 2017	Normal	4.54	4.53	19.9	2.32	*40.7*	*<0.02*	**1**	0.96	4.68	0.66	**1.58**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**60.6**	80.9	-	-
QLD_Hist_202012-3	MW028	12 Oct 2017	Normal	3.74	4.91	19.1	1.37	*28.4*	*<0.02*	**0.1**	1.25	5.24	0.94	**2**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.06	*<0.05*	*<0.05*	**47.5**	67.1	-	-
QLD_0861_PFAS	MW028	16 Jan 2018	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
QLD_0861_PFAS	MW028	07 May 2019	Normal	1.9	1.85	13.6	1.26	*17.1*	*<0.02*	*<0.1*	0.46	2.54	0.47	**0.87**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**30.7**	40	-	-
QLD_0861_PFAS	MW028	27 Nov 2019	Normal	3.57	2.61	20.3	3.08	*33.9*	*<0.02*	**0.8**	0.93	4.74	0.98	**1.75**	*<0.02*	*

Table T2 Groundwater PFAS Analytical Results

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Perfluoroalkyl Sulfonamides							Fluorotelomer Sulfonic Acids				Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
	Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.001	0.001	0.001	0.001	0.0002	0.0002	0.002	0.002
HEPA 2020 Drinking Water Guideline Value												**0.56**																		**0.07**			
HEPA 2020 Freshwater 95% Guideline Value						*0.13*						*220*																					
HEPA 2020 Freshwater 99% Guideline Value						*0.00023*						*19*																					
Project ID	**Location**	**Date**	**Type**																														
QLD_0861_PFAS	MW026	29 Nov 2019	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW026	28 Apr 2020	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	***0.03***	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.03	0.03	-	-
QLD_0861_PFASOMP	MW026	16 Oct 2020	Normal	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.50*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.25*	*<0.10*	*<0.25*	*<0.10*	*<0.25*	*<0.25*	*<0.10*	*<0.25*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	-	-
QLD_0861_PFASOMP	MW026	20 Apr 2021	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	***0.02***	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.02	0.02	-	-
QLD_0861_PFASOMP	MW026	27 Oct 2021	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	-	-
QLD_0861_PFASOMP	MW026	06 Apr 2022	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	-	-
QLD_0861_PFASOMP	MW026	24 Oct 2022	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	-	-
QLD_0861_PFASOMP_23	MW026	19 Apr 2023	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	MW025	24 Jan 2013	Normal	-	-	-	-	*0.24*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW025	30 Aug 2013	Normal	-	-	-	-	*0.51*	-	-	-	-	-	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW025	22 Feb 2017	Normal	0.21	0.17	0.98	0.04	*0.6*	*<0.02*	**0.1**	0.06	0.16	0.03	0.08	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**1.58**	2.43	-	-
QLD_Hist_202012-3	MW025	11 Oct 2017	Normal	0.29	0.2	1.29	0.02	*0.3*	*<0.02*	*<0.1*	0.05	0.18	0.03	0.04	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**1.59**	2.4	-	-
QLD_0861_PFAS	MW025	01 May 2019	Normal	0.11	0.08	0.41	*<0.02*	*0.12*	*<0.02*	*<0.1*	0.02	0.08	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.53**	0.82	-	-
QLD_0861_PFAS	MW025	19 Nov 2019	Normal	0.1	0.07	0.45	*<0.02*	*0.28*	*<0.02*	*<0.1*	*<0.02*	0.07	*<0.02*	0.02	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.73**	0.99	-	-
QLD_0861_PFASOMP	MW025	27 Apr 2020	Normal	0.11	0.1	0.5	*<0.02*	*0.27*	*<0.02*	*<0.1*	0.03	0.08	*<0.02*	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.77**	1.12	-	-
QLD_0861_PFASOMP	MW025	14 Oct 2020	Normal	0.12	0.08	0.41	*<0.02*	*0.16*	*<0.02*	*<0.10*	0.03	0.06	*<0.02*	0.02	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.57**	0.88	-	-
QLD_0861_PFASOMP	MW025	14 Oct 2020	Interlab_D	0.096	0.064	0.4	*<0.01*	*0.12*	*<0.01*	*<0.05*	0.026	0.054	*<0.01*	0.017	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW025	14 Oct 2020	Field_D	0.11	0.07	0.41	*<0.02*	*0.12*	*<0.02*	*<0.10*	0.03	0.07	*<0.02*	0.02	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.53**	0.83	-	-
QLD_0861_PFASOMP	MW025	16 Apr 2021	Normal	0.14	0.12	0.58	0.02	*0.37*	*<0.02*	*<0.1*	0.05	0.12	0.02	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.95**	1.45	-	-
QLD_0861_PFASOMP	MW025	27 Oct 2021	Normal	0.13	0.1	0.58	*<0.02*	*0.14*	*<0.02*	*<0.1*	0.03	0.08	*<0.02*	0.02	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.72**	1.08	-	-
QLD_0861_PFASOMP	MW025	06 Apr 2022	Normal	0.28	0.21	1.17	0.04	*0.46*	*<0.02*	**0.2**	0.21	0.29	0.08	0.12	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**1.63**	3.06	-	-
QLD_0861_PFASOMP	MW025	24 Oct 2022	Normal	0.25	0.2	1.38	0.06	*1.06*	*<0.02*	**0.3**	0.38	0.64	0.15	0.17	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**2.44**	4.59	-	-
QLD_0861_PFASOMP_23	MW025	20 Apr 2023	Normal	0.27	0.26	1.34	0.06	*1.03*	*<0.02*	**0.3**	0.43	0.58	0.16	0.17	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**2.37**	4.6	-	-
QLD_Hist_202012-3	MW024	24 Jan 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW024	24 Jan 2013	Field_D	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW024	28 Aug 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW024	03 Mar 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	MW024	13 Oct 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFAS	MW024	01 May 2019	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFAS	MW024	21 Nov 2019	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW024	15 Oct 2020	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.10*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW024	20 Apr 2021	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	***0.04***	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.04	0.04	-	-
QLD_0861_PFASOMP	MW024	21 Oct 2021	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW024	04 Apr 2022	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW024	26 Oct 2022	Normal	*<0.02*	*<0.02*	0.04	*<0.02*	*<0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.04	0.04	-	-
QLD_0861_PFASOMP_23	MW024	28 Apr 2023	Normal	*<0.03*	*<0.02*	0.09	*<0.02*	*0.07*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.16**	0.16	-	-
QLD_Hist_202012-3	MW023	11 Feb 2013	Normal	-	-	-	-	*0.37*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW023	27 Aug 2013	Normal	-	-	-	-	*0.59*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW023	21 Feb 2017	Normal	0.06	0.03	0.26	*<0.02*	*0.12*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.38**	0.47	-	-
QLD_Hist_202012-3	MW023	10 Oct 2017	Normal	0.03	0.02	0.11	*<0.02*	*0.08*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.19**	0.24	-	-
QLD_0861_PFAS	MW023	13 May 2019	Normal	0.03	0.02	0.1	*<0.02*	*0.13*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.23**	0.28	-	-
QLD_0861_PFAS	MW023	03 Dec 2019	Normal	0.02	0.02	0.13	*<0.02*	*0.2*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.33**	0.37	-	-
QLD_0861_PFASOMP	MW023	22 Apr 2020	Normal	0.03	0.03	0.15	*<0.02*	*0.12*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.06	*<0.05*	*<0.05*	**0.27**	0.39	-	-
QLD_0861_PFASOMP	MW023	21 Oct 2020	Normal	0.04	0.03	0.15	*<0.02*	*0.08*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.23**	0.3	-	-
QLD_0861_PFASOMP	MW023	21 Oct 2020	Interlab_D	0.033	0.027	0.14	*<0.01*	*0.065*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW023	21 Oct 2020	Field_D	0.05	0.04	0.23	*<0.02*	*1.11*	*<0.02*	*<0.1*	0.02	0.04	*<0.02*	0.02	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**1.34**	1.51	-	-
QLD_0861_PFASOMP	MW023	21 Apr 2021	Normal	0.1	0.13	0.84	0.02	*0.31*	*<0.02*	*<0.1*	0.03	0.07	*<0.02*	0.01	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**1.15**	1.51	-	-
QLD_0861_PFASOMP	MW023	27 Oct 2021	Normal	0.07	0.07	0.45	*<0.02*	*0.07*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.52**	0.66	-	-
QLD_0861_PFASOMP	MW023	07 Apr 2022	Normal	0.16	0.16	0.66	*<0.02*	*0.18*	*<0.02*	*<0.1*	*<0.02*	0.04	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.84**	1.2	-	-
QLD_0861_PFASOMP	MW023	26 Oct 2022	Normal	0.09	0.06	0.37	*<0.02*	*0.13*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.5**	0.65	-	-
QLD_0861_PFASOMP_23	MW023	26 Apr 2023	Normal	0.06	0.05	0.26	*<0.02*	*0.16*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.42**	0.53	-	-
QLD_0861_PFASOMP_23	MW023	26 Apr 2023	Interlab_D	0.049	0.045	0.23	*<0.01*	*0.11*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP_23	MW023	26 Apr 2023	Field_D	0.06	0.05	0.27	*<0.02*	*0.15*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.42**	0.53	-	-
QLD_Hist_202012-3	MW022	24 Jan 2013	Normal	-	-	-	-	*0.88*	-	-	-	-	-	**0.58**	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW022	28 Aug 2013	Normal	-	-	-	-	*2.76*	-	-	-	-	-	**1.37**	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW022	02 Mar 2017	Normal	3.6	3.72	30.8	0.26	*1.14*	*<0.02*	**1**	0.87	5.18	0.28	0.29	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**31.9**	47.1	-	-
QLD_Hist_202012-3	MW022	16 Oct 2017	Normal	1.79	2.22	13.5	0.14	*0.64*	*<0.02*	**0.3**	0.52	2.47	0.24	0.33	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**14.1**	22.2	-	-
QLD_0861_PFAS	MW022	30 Apr 2019	Normal	1.95	2.05	16.9	0.12	*0.4*	*<0.02*	**0.6**	0.48	2.62	0.21	0.23	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**17.3**	25.6	-	-
QLD_0861_PFAS	MW022	19 Nov 2019	Normal	2.22	2	10.9	0.12	*1*	*<0.02*	**0.8**	0.43	1.87	0.29	0.35	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.06	*<0.05*	*<0.05*	**11.9**	20	-	-
QLD_0861_PFASOMP	MW022	21 Apr 2020	Normal	2.15	1.82	8.36	0.14	*0.95*	*<0.02*	**0.83**	0.32	1.41	0.25	0.34	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**9.31**	16.6	-	-
QLD_0861_PFASOMP	MW022	12 Oct 2020	Normal	2.24	1.75	9.34	0.14	*0.91*	*<0.02*	**0.77**	0.31	1.02	0.22	0.34	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**10.2**	17	-	-
QLD_0861_PFASOMP	MW022	16 Apr 2021	Normal	1.26	1.92	16.3	0.32	*1.83*	*<0.02*	**0.4**	0.26	1.26	0.24	0.56	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**18.1**	24.4	-	-
QLD_0861_PFASOMP	MW022	21 Oct 2021	Normal	1.42	1.27	7.72	0.15	*1.29*	*<0.02*	**0.7**	0.29	1.44	0.27	0.4	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**9.01**	15	-	-
QLD_0861_PFASOMP	MW022	30 Mar 2022	Normal	0.61	0.61	3.95	0.05	*0.29*	*<0.02*	**0.2**	0.13	0.57	0.07	0.14	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**4.24**	6.62	-	-
QLD_0861_PFASOMP	MW022	09 Nov 2022	Normal	0.18	0.21	1.42	*<0.02*	*0.12*	*<0.02*	*<0.1*	0.04	0.23	0.02	0.04	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**1.54**	2.26	-	-
QLD_0861_PFASOMP	MW022	09 Nov 2022	Interlab_D	0.13	0.15	1.1	*<0.01*	*0.071*	*<0.01*	**0.067**	0.025	0.13	0.013	0.018	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*

Table T2 Groundwater PFAS Analytical Results

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Perfluoroalkyl Sulfonamides							Fluorotelomer Sulfonic Acids				Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
	Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.001	0.001	0.001	0.001	0.0002	0.0002	0.002	0.002
HEPA 2020 Drinking Water Guideline Value												**0.56**																		**0.07**			
HEPA 2020 Freshwater 95% Guideline Value						*0.13*						*220*																					
HEPA 2020 Freshwater 99% Guideline Value						*0.00023*						*19*																					
Project ID	**Location**	**Date**	**Type**																														
QLD_Hist_202012-3	MW020	06 Feb 2013	Normal	-	-	-	-	*37*	-	-	-	-	-	**1.03**	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW020	27 Aug 2013	Normal	-	-	-	-	*8.02*	-	-	-	-	-	0.39	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW020	23 Feb 2017	Normal	1.14	1.06	5.91	0.17	*1.9*	*<0.02*	*<0.1*	1.05	0.88	0.23	0.28	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.18	*<0.05*	*<0.05*	**7.81**	12.8	-	-
QLD_Hist_202012-3	MW020	09 Oct 2017	Normal	0.32	0.5	2.79	0.12	*1.1*	*<0.02*	*<0.1*	0.6	0.82	0.32	0.36	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**3.89**	6.93	-	-
QLD_0861_PFAS	MW020	08 May 2019	Normal	1.3	1.51	12.2	0.62	*10.5*	*<0.05*	*<0.2*	2.18	3.69	1.2	**1.31**	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	0.14	*<0.05*	*<0.05*	**22.7**	34.6	-	-
QLD_0861_FSBGME	MW020	25 Jun 2019	Normal	0.56	0.84	8.1	0.33	*6.8*	*<0.01*	**0.25**	1	2	0.69	**0.8**	0.02	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	0.11	*<0.01*	*<0.01*	**14.9**	21.68	-	-
QLD_0861_FSBGME	MW020	25 Jun 2019	Interlab_D	2.26	2.94	23	1	*11.3*	*<0.05*	*<0.5*	4.12	6.51	2.08	**2.2**	0.06	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**34.3**	55.5	-	-
QLD_0861_FSBGME	MW020	25 Jun 2019	Field_D	1.7	2.1	26	1.1	*25*	*<0.01*	**1.1**	4.4	10	1.8	**1.8**	0.13	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	0.41	0.01	*<0.01*	**51**	76.49	-	-
QLD_0861_PFAS	MW020	25 Nov 2019	Normal	0.73	0.83	6.51	0.28	*3.25*	*<0.02*	**0.3**	1.22	1.88	0.76	**0.78**	0.02	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.1	*<0.05*	*<0.05*	**9.76**	16.7	-	-
QLD_0861_PFASOMP	MW020	27 Apr 2020	Normal	0.98	1.28	10.6	0.81	*9.87*	*<0.07*	*<0.4*	1.29	2.48	1.02	**1.33**	*<0.07*	*<0.07*	*<0.07*	*<0.07*	*<0.07*	*<0.18*	*<0.07*	*<0.18*	*<0.07*	*<0.18*	*<0.18*	*<0.07*	*<0.18*	*<0.07*	0.08	*<0.07*	*<0.07*	**20.5**	29.7	-	-
QLD_0861_PFASOMP	MW020	13 Oct 2020	Normal	0.39	0.44	3.53	0.23	*3.29*	*<0.10*	*<0.50*	0.54	0.9	0.37	0.52	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.25*	*<0.10*	*<0.25*	*<0.25*	*<0.10*	*<0.25*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	**6.82**	10.2	-	-
QLD_0861_PFASOMP	MW020	20 Apr 2021	Normal	1.1	2.02	10.6	1.7	*30.3*	*<0.02*	**0.5**	2.07	3.29	1.2	**2.07**	0.18	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.34	*<0.05*	*<0.05*	**40.9**	55.4	-	-
QLD_0861_PFASOMP	MW020	27 Oct 2021	Normal	0.63	0.75	5.78	0.46	*7.07*	*<0.02*	**0.4**	0.9	1.71	0.5	**0.91**	0.06	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.15	*<0.05*	*<0.05*	**12.8**	19.3	-	-
QLD_0861_PFASOMP	MW020	06 Apr 2022	Normal	1.42	1.57	13.8	1.55	*72.1*	*<0.05*	*<0.9*	2.71	4.22	1.19	**2.6**	0.51	0.11	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	0.71	*<0.10*	*<0.05*	**85.9**	102	-	-
QLD_0861_PFASOMP	MW020	25 Oct 2022	Normal	0.16	0.17	1.12	0.06	*2.13*	*<0.02*	**0.2**	0.36	0.31	0.09	0.06	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**3.25**	4.66	-	-
QLD_0861_PFASOMP_23	MW020	21 Apr 2023	Normal	4.36	5.78	46.8	3.69	*87.1*	*<0.10*	**2.1**	7.27	12.1	4.19	**5.59**	0.64	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.24*	*<0.10*	*<0.24*	*<0.10*	*<0.24*	*<0.24*	*<0.10*	*<0.24*	*<0.10*	0.88	*<0.10*	*<0.10*	**134**	180	-	-
QLD_Hist_202012-3	MW019	31 Jul 2012	Normal	-	-	-	-	*0.23*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW019	17 Oct 2012	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW019	06 Feb 2013	Normal	-	-	-	-	*0.5*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW019	27 Aug 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW018	30 Jul 2012	Normal	-	-	-	-	*0.2*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW018	16 Oct 2012	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW018	11 Feb 2013	Normal	-	-	-	-	*0.25*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW018	12 Sep 2013	Normal	*<0.02*	-	*<0.02*	-	*<0.02*	-	-	-	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.5*	*<0.02*	*<0.5*	-	*<0.5*	*<0.05*	-	*<0.5*	-	*<0.1*	*<0.5*	-	-	-	-	-
QLD_Hist_202012-3	MW018	01 Mar 2017	Normal	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.2*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	-	-
QLD_Hist_202012-3	MW018	13 Oct 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	MW017	30 Jul 2012	Normal	-	-	-	-	*0.13*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW017	16 Oct 2012	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW017	22 Jan 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW017	27 Aug 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW017	21 Feb 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	MW017	10 Oct 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	MW016	31 Jul 2012	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW016	17 Oct 2012	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW016	11 Feb 2013	Normal	-	-	-	-	*0.03*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW015	08 Nov 2011	Normal	-	-	-	-	*1.71*	-	-	-	-	-	0.08	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW015	25 Jul 2012	Normal	-	-	-	-	*0.09*	-	-	-	-	-	0.18	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW015	17 Oct 2012	Normal	-	-	-	-	*4.4*	-	-	-	-	-	0.35	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW015	25 Jan 2013	Normal	-	-	-	-	*0.09*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW015	29 Aug 2013	Normal	-	-	-	-	*0.21*	-	-	-	-	-	0.15	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW014	25 Jul 2012	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW014	17 Oct 2012	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW014	25 Jan 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW014	28 Aug 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW014	23 Feb 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	MW014	10 Oct 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	MW013	31 Jul 2012	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW013	17 Oct 2012	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW013	06 Feb 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW013	28 Aug 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW013	23 Feb 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	MW013	09 Oct 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_Stage2	MW013	31 May 2018	Normal	*<0.10*	-	*<0.10*	-	*<0.10*	-	*<0.5*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	-	-	-
QLD_Hist_202012-3	MW012	31 Jul 2012	Normal	-	-	-	-	*0.15*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW012	17 Oct 2012	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW012	11 Feb 2013	Normal	-	-	-	-	*0.21*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW012	28 Aug 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW012	23 Feb 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	MW012	10 Oct 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFAS	MW012	08 May 2019	Normal	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.2*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	-	-
QLD_0861_PFAS	MW012	26 Nov 2019	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW012	27 Apr 2020	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW012	13 Oct 2020	Normal	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.25*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	0.09	*<0.12*	*<0.12*	0.05	*<0.12*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.14	-	-
QLD_0861_PFASOMP	MW012	20 Apr 2021	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.01	0.01	-	-
QLD_0861_PFASOMP	MW012	27 Oct 2021	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.02	0.02	-	-
QLD_0861_PFASOMP	MW012	27 Oct 2021	Interlab_D	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*0.024*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW012	27 Oct 2021	Field_D	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.02	0.02	-	-
QLD_0861_PFASOMP	MW012	06 Apr 2022	Normal	*<0.05*	*<0.02*	*<0.02*	*<0.02*	*0.17*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.17**	0.17	-	-
QLD_0861_PFASOMP	MW012	24 Oct 2022	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*0.06*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.06	0.06	-	-
QLD_0861_PFASOMP	MW012	24 Oct 2022	Interlab_D	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*0.034*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW012	24 Oct 2022	Field_D	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*0.04*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.04	0.04	-	-
QLD_0861_PFASOMP_23	MW012	21 Apr 2023	Normal	*<0.02*	*<0.02*	0.02	*<0.02*	*0.04*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.06	0.06	-	-
QLD_Hist_202012-3	MW010	02 Aug 2012	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW010	12 Oct 2012	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW010	25 Jan 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW010	30 Aug 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW010	27 Feb 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	MW010	12 Oct 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	MW009	25 Jul 2012	Normal	-	-	-	-	*2.65*	-	-	-	-	-	0.28	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW009	15 Oct 2012	Normal	-	-	-	-	*2.26*	-	-	-	-	-	0.16	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW009	22 Jan 2013	Normal	-	-	-	-	*1.8*	-	-	-	-	-	0.07	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-

Table T2 Groundwater PFAS Analytical Results

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Perfluoroalkyl Sulfonamides							Fluorotelomer Sulfonic Acids				Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
	Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.001	0.001	0.001	0.001	0.0002	0.0002	0.002	0.002
HEPA 2020 Drinking Water Guideline Value												**0.56**																		**0.07**			
HEPA 2020 Freshwater 95% Guideline Value						*0.13*						*220*																					
HEPA 2020 Freshwater 99% Guideline Value						*0.00023*						*19*																					
Project ID	**Location**	**Date**	**Type**																														
QLD_Hist_202012-3	MW009	27 Aug 2013	Normal	-	-	-	-	*2.54*	-	-	-	-	-	0.29	-	-	-	-	-	-	-	-	-	-	-	-	-	0.3	-	-	-	-	-	-
QLD_Hist_202012-3	MW009	22 Feb 2017	Normal	0.25	0.23	1.44	0.07	*2.26*	*<0.02*	**0.6**	0.69	0.7	0.25	0.31	0.06	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.16	*<0.05*	*<0.05*	**3.7**	7.02	-	-
QLD_Hist_202012-3	MW009	18 Oct 2017	Normal	0.19	0.25	1.19	0.07	*1.77*	*<0.02*	**0.1**	0.58	0.72	0.36	0.26	0.05	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.1	*<0.05*	*<0.05*	**2.96**	5.64	-	-
QLD_0861_PFAS	MW009	01 May 2019	Normal	0.18	0.16	1.13	0.04	*1.27*	*<0.02*	**0.2**	0.37	0.47	0.14	0.14	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**2.4**	4.13	-	-
QLD_0861_PFAS	MW009	29 Nov 2019	Normal	0.23	0.2	1.28	0.06	*1.62*	*<0.02*	**0.2**	0.44	0.52	0.15	0.2	0.04	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**2.9**	4.94	-	-
QLD_0861_PFAS	MW009	29 Nov 2019	Interlab_D	0.2	0.17	1.2	0.06	*1.6*	*<0.02*	**0.23**	0.44	0.49	0.18	0.22	0.04	*<0.02*	*<0.02*	*<0.05*	*<0.1*	*<0.5*	*<0.1*	*<0.05*	*<0.02*	*<0.05*	*<0.1*	*<0.02*	*<0.5*	*<0.01*	0.03	*<0.01*	*<0.01*	**2.7**	4.8	-	-
QLD_0861_PFAS	MW009	29 Nov 2019	Field_D	0.23	0.19	1.23	0.06	*1.58*	*<0.02*	**0.2**	0.43	0.52	0.15	0.2	0.04	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**2.81**	4.83	-	-
QLD_Hist_202012-3	MW008	26 Jul 2012	Normal	-	-	-	-	*0.19*	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW008	15 Oct 2012	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW008	22 Jan 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW008	26 Aug 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_0861_PFAS	MW008	16 Jan 2018	Normal	*<0.02*	*<0.02*	0.06	*<0.02*	*0.08*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.14**	0.14	0.05	0.03
QLD_0861_PFAS	MW008	01 May 2019	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	MW007	26 Jul 2012	Normal	-	-	-	-	*99.1*	-	-	-	-	-	**2.71**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW007	15 Oct 2012	Normal	-	-	-	-	*67.8*	-	-	-	-	-	**2.48**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW007	22 Jan 2013	Normal	-	-	-	-	*161*	-	-	-	-	-	**3.12**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW007	27 Aug 2013	Normal	-	-	-	-	*122*	-	-	-	-	-	**2.08**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW007	22 Feb 2017	Normal	2.36	2.37	21	2.04	*88.4*	*<0.02*	**1.7**	0.92	3.88	0.62	**2**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	1.62	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.24	*<0.05*	*<0.05*	**109**	127	-	-
QLD_Hist_202012-3	MW007	11 Oct 2017	Normal	2.5	2.34	16.6	1.64	*56.7*	*<0.02*	**0.4**	0.66	3.09	0.6	**1.09**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	0.32	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.23	*<0.05*	*<0.05*	**73.3**	86.2	-	-
QLD_0861_PFAS	MW007	13 May 2019	Normal	1.51	1.84	14.5	1.62	*35.2*	*<0.02*	**0.1**	0.63	2.77	0.46	**1.23**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	0.57	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.14	*<0.05*	*<0.05*	**49.7**	60.6	-	-
QLD_0861_PFAS	MW007	13 May 2019	Field_D	1.54	1.87	14.7	1.68	*36.5*	*<0.02*	**0.1**	0.64	2.77	0.47	**1.23**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	0.59	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.16	*<0.05*	*<0.05*	**51.2**	62.2	-	-
QLD_0861_FSBGME	MW007	25 Jun 2019	Normal	1.3	1.5	17	1.2	*81*	*<0.01*	**0.32**	0.51	3.9	0.48	**1.2**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	0.56	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	0.25	*<0.01*	*<0.01*	**98**	110.22	-	-
QLD_0861_PFAS	MW007	03 Dec 2019	Normal	1.5	1.76	14.2	1.67	*35.6*	*<0.24*	*<1.2*	0.36	2.46	0.43	**0.95**	*<0.24*	*<0.24*	*<0.24*	*<1.06*	*<0.24*	*<0.60*	0.29	*<0.60*	*<0.24*	*<0.60*	*<0.60*	*<0.24*	*<0.60*	*<0.24*	*<0.24*	*<0.24*	*<0.24*	**49.8**	59.2	-	-
QLD_0861_PFAS	MW007	03 Dec 2019	Interlab_D	2	1.9	18	1.8	*33*	*<0.02*	**0.53**	0.78	3.2	0.59	**1.4**	*<0.01*	*<0.02*	*<0.02*	*<0.05*	*<0.1*	*<0.5*	0.5	*<0.05*	*<0.02*	*<0.05*	*<0.1*	*<0.02*	*<0.5*	*<0.01*	0.2	*<0.01*	*<0.01*	**51**	64	-	-
QLD_0861_PFAS	MW007	03 Dec 2019	Field_D	1.75	2.22	17.2	1.89	*38.9*	*<0.02*	**0.4**	0.7	3.33	0.52	**1.43**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	0.48	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.18	*<0.05*	*<0.05*	**56.1**	69	-	-
QLD_0861_PFASOMP	MW007	28 Apr 2020	Normal	2.06	2	16.6	1.59	*35.2*	*<0.06*	*<0.3*	0.73	3.13	0.53	**1.37**	*<0.06*	*<0.06*	*<0.06*	*<0.06*	*<0.06*	*<0.16*	0.14	*<0.16*	*<0.06*	*<0.16*	*<0.16*	*<0.06*	*<0.16*	*<0.06*	0.18	*<0.06*	*<0.06*	**51.8**	63.5	-	-
QLD_0861_PFASOMP	MW007	19 Oct 2020	Normal	2.38	2.45	19.7	1.31	*28*	*<0.04*	**0.5**	0.76	3.94	0.66	**1.47**	*<0.04*	*<0.04*	*<0.04*	*<0.04*	*<0.04*	*<0.10*	0.51	*<0.10*	*<0.04*	*<0.10*	*<0.10*	*<0.04*	*<0.10*	*<0.05*	0.12	*<0.05*	*<0.05*	**47.7**	61.8	-	-
QLD_0861_PFASOMP	MW007	19 Oct 2020	Interlab_D	1.7	1.6	15	1.1	*24*	*<0.01*	**0.47**	0.67	2.5	0.46	**1**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	0.12	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	0.13	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW007	19 Oct 2020	Field_D	2.14	2.32	17.2	1.29	*27.2*	*<0.20*	*<1.0*	0.79	3.69	0.65	**1.37**	*<0.20*	*<0.20*	*<0.20*	*<0.20*	*<0.20*	*<0.50*	0.5	*<0.50*	*<0.20*	*<0.50*	*<0.50*	*<0.20*	*<0.50*	*<0.20*	1.74	*<0.20*	*<0.20*	**44.4**	58.9	-	-
QLD_0861_PFASOMP	MW007	19 Apr 2021	Normal	2	2.87	15.6	1.83	*32.8*	*<0.02*	**0.5**	0.8	3.71	0.57	**1.26**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	0.53	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.14	*<0.05*	*<0.05*	**48.4**	62.6	-	-
QLD_0861_PFASOMP	MW007	27 Oct 2021	Normal	2.13	2.36	19.5	1.41	*33.9*	*<0.04*	**0.4**	0.85	3.81	0.59	**1.35**	*<0.04*	*<0.04*	*<0.04*	*<0.04*	*<0.04*	*<0.09*	*<0.48*	*<0.09*	*<0.04*	*<0.09*	*<0.09*	*<0.04*	*<0.09*	*<0.05*	*<0.15*	*<0.05*	*<0.05*	**53.4**	66.3	-	-
QLD_0861_PFASOMP	MW007	27 Oct 2021	Interlab_D	1.6	1.7	13	0.96	*19*	*<0.01*	**0.45**	0.63	2.3	0.39	**0.85**	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	0.13	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	0.085	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW007	27 Oct 2021	Field_D	2.04	2.54	18.1	1.4	*33.6*	*<0.04*	**0.4**	0.81	3.9	0.57	**1.37**	*<0.04*	*<0.04*	*<0.04*	*<0.04*	*<0.04*	*<0.11*	*<0.42*	*<0.11*	*<0.04*	*<0.11*	*<0.11*	*<0.04*	*<0.11*	*<0.05*	0.12	*<0.05*	*<0.05*	**51.7**	64.8	-	-
QLD_0861_PFASOMP	MW007	06 Apr 2022	Normal	0.19	0.18	1.26	0.11	*4.69*	*<0.02*	*<0.1*	0.08	0.27	0.05	0.11	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	0.1	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**5.95**	7.04	-	-
QLD_0861_PFASOMP	MW007	26 Oct 2022	Normal	1.5	1.7	10.6	0.5	*5.78*	*<0.02*	**0.3**	0.53	2.95	0.42	**0.69**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	0.06	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**16.4**	25	-	-
QLD_0861_PFASOMP_23	MW007	21 Apr 2023	Normal	1.84	1.97	13.3	0.8	*8.88*	*<0.02*	**0.4**	0.67	2.85	0.46	**0.82**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	0.09	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	*<0.05*	0.05	*<0.05*	*<0.05*	**22.2**	32.1	-	-
QLD_Hist_202012-3	MW006	30 Jul 2012	Normal	-	-	-	-	*44.8*	-	-	-	-	-	**10.9**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW006	15 Oct 2012	Normal	-	-	-	-	*49.9*	-	-	-	-	-	**5.56**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.5	-	-	-	-	-	-
QLD_Hist_202012-3	MW006	22 Jan 2013	Normal	-	-	-	-	*106*	-	-	-	-	-	**9.91**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2	-	-	-	-	-	-
QLD_Hist_202012-3	MW006	27 Aug 2013	Normal	-	-	-	-	*315*	-	-	-	-	-	**7.85**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.2	-	-	-	-	-	-
QLD_Hist_202012-3	MW006	21 Feb 2017	Normal	3.76	2.68	20.5	2.07	*152*	*<0.02*	**0.6**	1.97	6.43	0.67	**2.44**	0.06	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	0.18	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.29	*<0.05*	*<0.05*	**172**	194	-	-
QLD_Hist_202012-3	MW006	21 Feb 2017	Field_D	3.93	2.76	29.9	2.2	*157*	*<0.02*	**0.5**	1.9	6.38	0.61	**2.46**	0.05	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	0.17	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.28	*<0.05*	*<0.05*	**187**	208	-	-
QLD_Hist_202012-3	MW006	21 Feb 2017	Field_D	1.9	-	21	-	*190*	*<0.3*	*<1.5*	1.1	5.4	0.85	**2.2**	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<0.3*	*<1.5*	-	*<1.5*	-	-	*<1.5*	-	*<0.3*	*<1.5*	*<0.3*	-	-	-	-	-
QLD_Hist_202012-3	MW006	10 Oct 2017	Normal	1.77	2.01	23.2	1.81	*144*	*<0.02*	**1**	1.64	6.31	1	**1.95**	0.1	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	0.21	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.31	*<0.05*	*<0.05*	**167**	185	-	-
QLD_0861_PFAS	MW006	13 May 2019	Normal	0.98	0.97	9.58	0.73	*66.5*	*<0.02*	**0.7**	1.33	2.96	0.54	**0.98**	0.08	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	0.26	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.33	0.07	*<0.05*	**76.1**	86	-	-
QLD_0861_PFAS	MW006	03 Dec 2019	Normal	1	0.92	8.15	0.83	*80.7*	*<0.24*	*<1.2*	0.85	2.55	0.49	**0.75**	*<0.24*	*<0.24*	*<0.24*	*<0.73*	*<0.24*	*<0.61*	*<0.24*	*<0.61*	*<0.24*	*<0.61*	*<0.61*	*<0.24*	*<0.61*	*<0.24*	0.27	*<0.24*	*<0.24*	**88.8**	96.5	-	-
QLD_0861_PFASOMP	MW006	22 Apr 2020	Normal	0.9	0.94	7.6	0.52	*49.8*	*<0.16*	*<0.8*	1.16	2.44	0.45	**0.79**	*<0.16*	*<0.16*	*<0.16*	*<0.16*	*<0.16*	*<0.4*	*<0.16*	*<0.4*	*<0.16*	*<0.4*	*<0.4*	*<0.16*	*<0.4*	*<0.16*	0.4	*<0.16*	*<0.16*	**57.4**	65	-	-
QLD_0861_PFASOMP	MW006	22 Apr 2020	Interlab_D	0.93	0.82	5.8	0.63	*36*	*<0.01*	**0.69**	1.4	2.3	0.51	**0.85**	0.066	0.012	*<0.01*	*<0.01*	*<0.02*	*<0.02*	0.16	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	0.41	0.032	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW006	22 Apr 2020	Field_D	1.09	0.93	8.27	0.6	*55.9*	*<0.16*	*<0.8*	1.47	2.54	0.5	**0.92**	*<0.16*	*<0.16*	*<0.16*	*<0.16*	*<0.16*	*<0.4*	*<0.16*	*<0.4*	*<0.16*	*<0.4*	*<0.4*	*<0.16*	*<0.4*	*<0.16*	0.47	*<0.16*	*<0.16*	**64.2**	72.7	-	-
QLD_0861_PFASOMP	MW006	21 Oct 2020	Normal	1.24	1.03	8.61	0.52	*45.4*	*<0.08*	**0.7**	1.41	3.22	0.61	**1.03**	*<0.08*	*<0.08*	*<0.08*	*<0.08*	*<0.08*	*<0.20*	0.23	*<0.20*	*<0.08*	*<0.20*	*<0.20*	*<0.08*	*<0.20*	*<0.08*	0.29	*<0.08*	*<0.08*	**54**	64.3	-	-
QLD_0861_PFASOMP	MW006	21 Oct 2020	Interlab_D	0.88	0.73	6.6	0.39	*43*	*<0.01*	**0.65**	1.3	2	0.46	**0.72**	0.063	0.01	*<0.01*	*<0.01*	*<0.02*	*<0.02*	0.13	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	0.31	0.049	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW006	21 Oct 2020	Field_D	0.95	1.08	8.39	0.46	*47.9*	*<0.17*	**0.9**	1.45	2.98	0.6	**0.96**	*<0.17*	*<0.17*	*<0.17*	*<0.17*	*<0.17*	*<0.43*	0.34	*<0.43*	*<0.17*	*<0.43*	*<0.43*	*<0.17*	*<0.43*	*<0.17*	0.9	*<0.17*	*<0.17*	**56.3**	66.9	-	-
QLD_0861_PFASOMP	MW006	21 Apr 2021	Normal	1.16	1.63	7.67	0.99	*47.4*	*<0.02*	**0.6**	1.8	3.42	0.76	**1.07**	0.07	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	0.35	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.36	0.06	*<0.05*	**55.1**	67.3	-	-
QLD_0861_PFASOMP	MW006	27 Oct 2021	Normal	1.44	1.12	8.72	0.44	*44*	*<0.10*	**0.5**	1.8	3.89	0.59	**1**	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.10*	*<0.25*	0.1	*<0.25*	*<0.10*	*<0.25*	*<0.25*	*<0.10*	*<0.25*	*<0.10*	0.37	*<0.10*	*<0.10*	**52.7**	64	-	-
QLD_0861_PFASOMP	MW006	07 Apr 2022	Normal	1.82	1.83	10.5	0.45	*42*	*<0.05*	**0.8**	2.11	3.79	0.75	**1.03**	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	0.28	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	0.39	*<0.05*	*<0.05*	**52.5**	65.8	-	-
QLD_0861_PFASOMP	MW006	26 Oct 2022	Normal	2.05	1.8	12.9	0.62	*43.8*	*<0.05*	**0.7**	1.94	5.06	0.74	**1.05**	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	0.22	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	0.42	*<0.05*	*<0.05*	**56.7**	71.3	-	-
QLD_0861_PFASOMP_23	MW006	26 Apr 2023	Normal	2.5	2.25	13.2	0.56	*42*	*<0.05*	**1**	2.44	5	0.77	**0.99**	0.06	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	0.13	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.05*	*<0.12*	*<0.05*	0.55	*<0.05*	*<0.05*	**55.2**	71.4	-	-
QLD_Hist_202012-3	MW005	31 Jul 2012	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW005	16 Oct 2012	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW005	11 Feb 2013	Normal	-	-	-	-	*0.05*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW005	27 Aug 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-
QLD_Hist_202012-3	MW005	28 Feb 2017	Normal	*<0.02*	*<0.02*	0.02	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.02	0.02	-	-
QLD_Hist_202012-3	MW005	12 Oct 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFAS	MW005	07 May 2019	Normal	*<0.02*	*<0.02*	0.06	*<0.02*	*0.35*	*<0.02*	*<0.1*	*<0.02*	0.03	*<0.02*	0.02	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.06	*<0.05*	*<0.05*	**0.41**	0.52	-	-
QLD_0861_PFAS	MW005	07 May 2019	Interlab_D	*<0.01*	*<0.01*	0.07	*<0.01*	*0.33*	*<0.02*	*<0.02*	*<0.02*	0.03	*<0.01*	0.02	*<0.01*	*<0.02*	*<0.02*	*<0.05*	*<0.1*	*<0.5*	*<0.1*	*<0.05*	*<0.02*	*<0.05*	*<0.1*	*<0.02*	*<0.5*	*<0.01*	0.04	*<0.01*	*<0.01*	**0.41**	0.49	-	-
QLD_0861_PFAS	MW005	07 May 2019	Field_D	*<0.02*	*<0.02*	0.06	*<0.02*	*0.23*	*<0.02*	*<0.1*	*<0.02*	0.03	*<0.02*	0.02	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.29**	0.34	-	-
QLD_0861_PFAS	MW005	19 Nov 2019	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*0.08*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	**0.08**	0.08	-	-
QLD_0861_PFASOMP	MW005	23 Apr 2020	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*0.03*	*<0.02*	*<0.3*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	0.06	*<0.05*	*<0.05*	0.03	0.09	-	-
QLD_0861_PFASOMP	MW005	16 Oct 2020	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.10*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW005	16 Oct 2020	Interlab_D	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	-	-	-	-
QLD_0861_PFASOMP	MW005	16 Oct 2020	Field_D	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.10*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	MW005	21 Apr 2021	Normal	*<0.02*	*<0.02*	0.04	*<0.02*	*0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.06

Table T2 Groundwater PFAS Analytical Results

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Perfluoroalkyl Sulfonamides							Fluorotelomer Sulfonic Acids				Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
	Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.0005	0.0005	0.0005	0.0005	0.0002	0.0005	0.002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.001	0.0005	0.001	0.001	0.0005	0.001	0.001	0.001	0.001	0.001	0.0002	0.0002	0.002	0.002
HEPA 2020 Drinking Water Guideline Value												**0.56**																		**0.07**			
HEPA 2020 Freshwater 95% Guideline Value						*0.13*						*220*																					
HEPA 2020 Freshwater 99% Guideline Value						*0.00023*						*19*																					
Project ID	**Location**	**Date**	**Type**																														
QLD_Hist_202012-3	MW004	16 Oct 2017	Normal	1.09	1.18	4.94	0.13	*1.06*	<0.02	**0.2**	0.43	2.1	0.29	0.4	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**6**	11.8	-	-
QLD_Hist_202012-3	MW003	30 Jul 2012	Normal	-	-	-	-	*0.74*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-
QLD_Hist_202012-3	MW003	17 Oct 2012	Normal	-	-	-	-	*0.98*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-
QLD_Hist_202012-3	MW003	11 Feb 2013	Normal	-	-	-	-	*0.56*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-
QLD_Hist_202012-3	MW003	28 Aug 2013	Normal	-	-	-	-	*1.34*	-	-	-	-	-	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-
QLD_Hist_202012-3	MW003	27 Feb 2017	Normal	0.69	0.4	2.21	0.06	*1.21*	<0.02	<0.1	0.1	0.26	0.03	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**3.42**	5.08	-	-
QLD_Hist_202012-3	MW003	16 Oct 2017	Normal	0.44	0.43	1.97	0.09	*1.63*	<0.02	<0.1	0.11	0.48	0.14	0.22	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	**3.6**	5.51	-	-
QLD_0861_PFAS	MW002	08 Feb 2018	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
QLD_0861_PFAS	MW002	20 Nov 2019	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<13.8	<0.05	<0.05	<0.12	<0.05	<0.12	<4.32	<0.12	<0.12	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
QLD_0861_PFASOMP	MW002	21 Apr 2020	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	MW002	21 Apr 2020	Interlab_D	<0.01	<0.01	<0.01	<0.01	*0.097*	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	-	-	-	-
QLD_0861_PFASOMP	MW002	13 Oct 2020	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12		<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-
QLD_0861_PFASOMP	MW002	13 Apr 2021	Normal	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	0.02	-	-
QLD_0861_PFASOMP	MW002	21 Oct 2021	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	MW002	21 Oct 2021	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	-	-	-	-
QLD_0861_PFASOMP	MW002	21 Oct 2021	Field_D	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	MW002	31 Mar 2022	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	MW002	26 Oct 2022	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP_23	MW002	22 May 2023	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.01	-	-

µg/L is micrograms per litre
-' denotes no analysis undertaken
<' denotes concentration is less than

Table T3 Surface Water Quality Parameter Results, April 2020 to May 2023

Location ID	Location	Sample Date	DO (mg/L)	EC (µS/cm)	pH	Eh/(mV)	Temp (°C)	Odour	Sheen	Sample Method/Comments
SW002	Drain	15/04/2020	6.8	427.5	7.6	216.9	20.1	Slight organic odour	Slight organic sheen	Grab sample
SW002	Drain	16/10/2020	-	-	7.22	290.6	34.6	Slight organic odour	Biosheen appearance	Grab sample
SW002	Drain	30/03/2021	2.61	290.7	7.34	304.4	24.2	No odour	No sheen	Grab sample
SW002	Drain	25/10/2021	0.11	248.2	6.88	213.2	23.2	No odour	Slight sheen	Grab sample
SW002	Drain	28/03/2022	3.32	195.6	7.18	251.5	23.3	No odour	No sheen	Grab sample
SW002	Drain	21/10/2022	6.36	251.7	7.76	210.4	21.2	No odour	No sheen	Grab sample
SW002	Drain	18/04/2023	1.18	137.4	6.97	238.6	23.5	No odour	No sheen	Grab sample
SW003	Drain	15/04/2020	-	-	-	-	-	-	-	Not sampled - dry
SW003	Drain	16/10/2020	-	-	6.94	303.1	26.2	Slight organic odour	No sheen	Grab sample
SW003	Drain	30/03/2021	5.25	433.8	7.7	304.5	27.1	No odour	No sheen	Grab sample
SW003	Drain	22/10/2021	3.14	141.3	8.06	250.2	22.8	No odour	No sheen	Grab sample
SW003	Drain	28/03/2022	4.7	245.4	7.42	255.1	22.4	No odour	No sheen	Grab sample
SW003	Drain	21/10/2022	7.28	183.1	7.9	197.2	21.5	No odour	No sheen	Grab sample
SW003	Drain	18/04/2023	3.32	246	6.72	248.1	23.7	No odour	No sheen	Grab sample
SW004	Warrill Creek	14/04/2020	3.73	557	7.69	318.4	20.3	Slight organic odour	No sheen	Grab sample
SW004	Warrill Creek	12/10/2020	3.21	369	7.39	319.1	20.5	No odour	No sheen	Grab sample
SW004	Warrill Creek	14/04/2021	5.97	371.3	7.47	348.3	20.5	No odour	No sheen	Grab sample
SW004	Warrill Creek	19/10/2021	5.71	594	7.37	343.2	19.7	No odour	No sheen	Grab sample
SW004	Warrill Creek	29/03/2022	5.7	437.1	7.45	254	22.7	No odour	No sheen	Grab sample
SW004	Warrill Creek	18/10/2022	6.58	539.7	7.01	195.9	20.9	No odour	No sheen	Grab sample
SW004	Warrill Creek	28/04/2023	1.13	641	7.71	221.4	20.3	No odour	No sheen	Grab sample
SW005	Warrill Creek	14/04/2020	3.54	552	7.68	314.7	19.7	Slight organic odour	No sheen	Grab sample
SW005	Warrill Creek	12/10/2020	0.69	185	7.44	209.5	19.8	Slight organic odour	No sheen	Grab sample
SW005	Warrill Creek	12/04/2021	5.21	303.5	7.61	307.9	21	No odour	No sheen	Grab sample
SW005	Warrill Creek	19/10/2021	5.72	594	7.43	346.7	19.7	No odour	No sheen	Grab sample
SW005	Warrill Creek	29/03/2022	6.08	444.1	7.58	270.8	22.7	No odour	No sheen	Grab sample
SW005	Warrill Creek	18/10/2022	2.85	498.6	6.93	133.8	20	No odour	No sheen	Grab sample
SW005	Warrill Creek	28/04/2023	0.58	208.7	7.1	234.4	21.6	No odour	No sheen	Grab sample
SW008	Drain	17/04/2020	2.43	681	7.25	250.4	22.6	No odour	No sheen	Grab sample
SW008	Drain	13/10/2020	-	-	6.98	390.1	27.1	Slight organic odour	No sheen	Grab sample
SW008	Drain	14/04/2021	1.88	234.3	6.93	206.6	18.4	No odour	Biosheen Appearance	Grab sample
SW008	Drain	25/10/2021	1.02	298.2	6.99	240.3	22.9	Organic odour	No sheen	Grab sample
SW008	Drain	28/03/2022	4.61	210.5	7.6	260.7	23	No odour	No sheen	Grab sample
SW008	Drain	28/03/2022	0.36	418.2	6.78	296.17	24.2	No odour	No sheen	Grab sample
SW008	Drain	28/04/2023	0.75	1045	7.38	176.7	24.1	No odour	No sheen	Grab sample
SW009	Warrill Creek	15/04/2020	5.26	579	8.08	300.8	21.5	No odour	No sheen	Grab sample
SW009	Warrill Creek	12/10/2020	2.91	415.5	8.03	217.8	20	Slight organic odour	Biosheen appearance	Grab sample
SW009	Warrill Creek	14/04/2021	5.92	377.4	7.42	379.3	20.5	No odour	No sheen	Grab sample
SW009	Warrill Creek	22/10/2021	4.99	518.3	7.41	318.6	21.9	No odour	No sheen	Grab sample
SW009	Warrill Creek	29/03/2022	4.01	280.2	7.22	222.7	22.5	No odour	No sheen	Grab sample
SW009	Warrill Creek	18/10/2022	6.28	814	6.57	195.9	21.8	No odour	No sheen	Grab sample
SW009	Warrill Creek	28/04/2023	-	640	6.8	220.2	21.2	No odour	No sheen	Grab sample
SW011	Drain	15/04/2020	7.71	322.4	7.86	339.1	24.2	Organic odour	Slight organic sheen	Grab sample
SW011	Drain	16/10/2020	-	-	9.04	268.2	35.5	Slight organic odour	No sheen	Grab sample
SW011	Drain	30/03/2021	7.45	526	8.01	300.9	25.7	No odour	Biosheen Appearance	Grab sample
SW011	Drain	25/10/2021	7.03	415.7	7.54	285.5	25.2	No odour	No sheen	Grab sample
SW011	Drain	28/03/2022	4.69	211	7.36	277	23.8	No odour	No sheen	Grab sample
SW011	Drain	18/10/2022	-	-	-	-	-	-	-	Not sampled: In an exclusion zone for underground service repairs and road works.
SW011	Drain	17/04/2023	2.97	702	7.06	276.3	27.4	No odour	No sheen	Grab sample
SW015	Warrill Creek	14/04/2020	3.84	558	7.67	287.9	20.3	Slight organic odour	No sheen	Grab sample
SW015	Warrill Creek	12/10/2020	4.64	389.9	7.92	240.7	24	No odour	No sheen	Grab sample
SW015	Warrill Creek	12/04/2021	5.06	303.5	7.23	320.7	21	No odour	No sheen	Grab sample
SW015	Warrill Creek	19/10/2021	4.69	847	7.48	335.6	20.1	No odour	No sheen	Grab sample
SW015	Warrill Creek	29/03/2022	5.31	442.4	7.62	235.8	22.8	No odour	No sheen	Grab sample
SW015	Warrill Creek	18/10/2022	7.44	542.4	6.85	193.9	20.9	No odour	No sheen	Grab sample
SW015	Warrill Creek	26/04/2023	1.28	709	7.73	229.6	20.3	Organic odour	No sheen	Grab sample
SW016	Warrill Creek	14/04/2020	3.83	578	7.68	294.7	20.3	Slight organic odour	No sheen	Grab sample
SW016	Warrill Creek	12/10/2020	-	396	8.88	228.5	24.5	Slight organic odour	No sheen	Grab sample
SW016	Warrill Creek	12/04/2021	5.02	306.8	7.31	320.2	21.1	No odour	No sheen	Grab sample
SW016	Warrill Creek	19/10/2021	6.91	869	6.82	340.8	19.7	No odour	No sheen	Grab sample
SW016	Warrill Creek	29/03/2022	6.53	440.4	7.54	237.9	22.8	No odour	No sheen	Grab sample
SW016	Warrill Creek	18/10/2022	6.73	592.5	7.2	208	20.9	No odour	No sheen	Grab sample
SW016	Warrill Creek	28/04/2023	0.27	688	7.62	212.6	20.4	No odour	No sheen	Grab sample
SW018	Warrill Creek	14/04/2020	4.06	577	7.79	303.7	19.8	No odour	No sheen	Grab sample
SW018	Warrill Creek	12/10/2020	2.61	369.1	7.72	245.6	20.1	No odour	No sheen	Grab sample
SW018	Warrill Creek	12/04/2021	5	300.9	7.22	324.9	20.9	No odour	No sheen	Grab sample
SW018	Warrill Creek	19/10/2021	5.2	849	7.52	332.5	19.9	No odour	No sheen	Grab sample
SW018	Warrill Creek	29/03/2022	5.71	433.7	7.72	280.1	22.8	No odour	No sheen	Grab sample
SW018	Warrill Creek	18/10/2022	6.51	540.3	7.11	208	20.7	No odour	No sheen	Grab sample
SW018	Warrill Creek	28/04/2023	1.01	657	7.61	243.1	21.2	No odour	No sheen	Grab sample
SW020	Warrill Creek	14/04/2020	4.02	577	7.61	235.2	19.8	Slight organic odour	No sheen	Grab sample
SW020	Warrill Creek	12/10/2020	3.55	369.3	7.47	263.2	20.4	No odour	No sheen	Grab sample
SW020	Warrill Creek	12/04/2021	5.53	300.5	7.28	322.7	20.9	No odour	No sheen	Grab sample
SW020	Warrill Creek	19/10/2021	5.12	844	7.57	333.7	19.8	No odour	No sheen	Grab sample
SW020	Warrill Creek	29/03/2022	5.97	434.2	7.74	285.7	22.8	No odour	No sheen	Grab sample
SW020	Warrill Creek	18/10/2022	7.12	540.2	7.19	216.9	20.7	No odour	No sheen	Grab sample
SW020	Warrill Creek	28/04/2023	-	631	7.64	237.1	20.2	No odour	No sheen	Grab sample
SW021	Drain	20/04/2020	6.01	372.8	8.21	240.6	20.8	No odour	No sheen	Grab sample
SW021	Drain	14/10/2020	-	-	7.75	300.5	25.9	No odour	No sheen	Grab sample
SW021	Drain	30/03/2021	3.00	768	7.73	309.8	23.4	Slight Organic Odour	No sheen	Grab sample
SW021	Drain	20/10/2021	3.95	315.5	8.32	281.6	21.3	Slight organic odour	No sheen	Grab sample
SW021	Drain	31/03/2022	4.85	273.5	6.83	274.4	23.2	No odour	No sheen	Grab sample
SW021	Drain	21/10/2022	6.15	349.8	7.29	187.6	20.8	No odour	No sheen	Grab sample
SW021	Drain	26/04/2023	-	322.5	9.49	238.4	21.2	No odour	No sheen	Grab sample
SW025	Bremer River	14/04/2020	1.53	242.7	7.4	533.9	20.9	Slight organic odour	No sheen	Grab sample
SW025	Bremer River	14/10/2020	4.1	285.3	8.01	232.4	24.5	Slight organic odour	No sheen	Grab sample
SW025	Bremer River	21/04/2021	4.82	248	7.6	238.5	22.8	No odour	Slight biosheen	Grab sample
SW025	Bremer River	21/10/2021	4.27	168.9	6.78	345.5	20.5	No odour	No sheen	Grab sample
SW025	Bremer River	28/03/2022	6.73	654	7.93	259.4	23.4	No odour	No sheen	Grab sample
SW025	Bremer River	20/10/2022	4.12	783	7.23	212.3	20	No odour	No sheen	Grab sample
SW025	Bremer River	26/04/2023	-	1774	8	266.8	21	Organic odour	No sheen	Grab sample
SW026	Warrill Creek	21/04/2020	4.2	712	8.24	230.2	20	No odour	No sheen	Grab sample
SW026	Warrill Creek	15/10/2020	5.1	500	8.06	302.8	25.4	No odour	Biosheen appearance	Grab sample
SW026	Warrill Creek	13/04/2021	5.39	327.3	7.58	310.6	24.1	No odour	No sheen	Grab sample
SW026	Warrill Creek	20/10/2021	1.88	433.4	6.8	307.2	24.5	No odour	No sheen	Grab sample
SW026	Warrill Creek	1/04/2022	5.68	336.6	7.65	271.3	23.4	No odour	No sheen	Grab sample
SW026	Warrill Creek	20/10/2022	5.24	441.7	7.39	220.6	20.4	No odour	No sheen	Grab sample
SW026	Warrill Creek	19/04/2023	0.87	662	7.41	245	21.8	Organic odour	No sheen	Grab sample
SW027	Drain	15/04/2020	-	-	-	-	-	-	-	Not sampled - dry
SW027	Drain	16/10/2020	-	-	-	-	-	-	-	Not sampled -dry during three visits
SW027	Drain	30/03/2021	3.63	664	7.4	304.2	23.4	No odour	Biosheen Appearance	Grab sample
SW027	Drain	25/10/2021	5.12	666	7.45	290	21.5	No odour	No sheen	Grab sample
SW027	Drain	28/03/2022	4.56	37.3	6.84	131.7	22.2	No odour	No sheen	Grab sample
SW027	Drain	21/10/2022	8.89	92.3	8.21	218.6	21.1	No odour	No sheen	Grab sample
SW027	Drain	17/04/2023	0.97	524.1	7.04	275.3	23	No odour	No sheen	Grab sample
SW028	Drain	14/04/2020	0.87	260.6	7.71	263.9	20.3	Slight organic odour	No sheen	Grab sample
SW028	Drain	12/10/2020	-	-	7.61	291.3	30.7	No odour	No sheen	Grab sample
SW028	Drain	12/04/2021	3.36	150.3	6.75	325.2	24.1	No odour	No sheen	Grab sample
SW028	Drain	19/10/2021	3.95	199.1	6.76	330	19	No odour	No sheen	Grab sample
SW028	Drain	29/03/2022	3.31	141.8	7.06	385.5	21.1	No odour	No sheen	Grab sample
SW028	Drain	18/10/2022	8.69	447.2	6.75	208.3	22.5	No odour	No sheen	Grab sample
SW028	Drain	9/04/2023	1.23	642	6.95	230.3	21.3	No odour	No sheen	Grab sample
SW030	Drain	15/04/2020	-	-	-	-	-	-	-	Not sampled - dry
SW030	Drain	16/10/2020	-	-	8.81	295.4	24.9	No odour	No sheen	Grab sample
SW030	Drain	30/03/2021	5.02	530	8.26	293.2	28.6	No odour	No sheen	Grab sample
SW030	Drain	26/10/2021	2.18	728	7.02	187.1	25.8	Organic odour	Sheen	Grab sample
SW030	Drain	28/03/2022	3.67	153.7	7.24	200.7	23.8	No odour	No sheen	Grab sample
SW030	Drain	21/10/2022	6.63	375.1	7.28	207.4	20.8	No odour	No sheen	Grab sample
SW030	Drain	17/04/2023	1.36	202	7.4	249.2	24.6	No odour	No sheen	Grab sample
SW033	Drain	27/04/2020	4.23	538	8.12	157.6	28	No odour	No sheen	Grab sample
SW033	Drain	15/10/2020	-	-	-	-	-	-	-	Not sampled -dry during three visits
SW033	Drain	14/04/2021	2.95	954	7.58	304.5	18.1	No odour	No sheen	Grab sample
SW033	Drain	26/10/2021	4.26	474	7.54	284.6	25.4	Organic odour	No sheen	Grab sample
SW033	Drain	4/04/2022	8.78	372.3	7.73	167.5	27.2	No odour	No sheen	Grab sample
SW033	Drain	25/10/2022	5.03	380.7	7.6	256	32.6	No odour	No sheen	Grab sample
SW033	Drain	27/04/2023	-	-	-	-	-	-	-	Not sampled - dry
SW034	Warrill Creek	14/04/2020	2.91	579	7.78	325.4	20.1	Slight organic odour	No sheen	Grab sample
SW034	Warrill Creek	12/10/2020	1.28	379.3	7.89	585	21.4	Slight organic odour	No sheen	Grab sample
SW034	Warrill Creek	12/04/2021	5.08	301.4	7.24	325.3	21	No odour	No sheen	Grab sample
SW034	Warrill Creek	19/10/2021	5.17	754	7.52	339.2	19.9	No odour	No sheen	Grab sample
SW034	Warrill Creek	29/03/2022	6.38	432.8	7.67	268.9	22.8	No odour	No sheen	Grab sample
SW034	Warrill Creek	18/10/2022	6.45	539.9	7.14	183.5	20.7	No odour	No sheen	Grab sample
SW034	Warrill Creek	28/04/2023	-	458	7.97	227.4	20.4	No odour	No sheen	Grab sample
SW036	Bremer River	15/04/2020	0.92	346.3	7.44	209.6	20	No odour	No sheen	Grab sample
SW036	Bremer River	14/10/2020	2.92	372.4	8	223.9	18.7	Slight organic odour	Biosheen appearance	Grab sample
SW036	Bremer River	14/04/2021	2.26	224.5	6.95	339.5	20.5	No odour	No sheen	Grab sample
SW036	Bremer River	20/10/2021	3.92	238.5	7.12	282.1	19.5	No odour	No sheen	Grab sample
SW036	Bremer River	1/04/2022	5.8	408	7.4	219.9	23.1	No odour	No sheen	Grab sample

Table T3 Surface Water Quality Parameter Results, April 2020 to May 2023

Location ID	Location	Sample Date	DO (mg/L)	EC (µS/cm)	pH	Eh/(mV)	Temp (°C)	Odour	Sheen	Sample Method/Comments
SW036	Bremer River	19/10/2022	4.14	93.7	7.15	192.7	20.4	No odour	No sheen	Grab sample
SW036	Bremer River	22/05/2023	2.8	321.6	6.03	357.8	13.1	No odour	No sheen	Grab sample
SW037	Drain	15/04/2020	1.64	1097	7.03	89.2	29.7	Organic odour	Slight organic sheen	Grab sample
SW037	Drain	14/10/2020	0.11	1797	7.76	45.7	26.4	Organic odour	Biosheen appearance	Grab sample
SW037	Drain	30/03/2021	0.66	609	6.96	231.3	27.1	Slight Organic Odour	No sheen	Grab sample
SW037	Drain	26/10/2021	0.11	549	7.08	205.5	26.8	Organic odour	Sheen	Grab sample
SW037	Drain	30/03/2022	3.73	205.9	7.02	275.3	22.4	No odour	No sheen	Grab sample
SW037	Drain	21/10/2022	2.81	314	7.28	319.8	20.6	No odour	No sheen	Grab sample
SW037	Drain	18/04/2023	0.85	503	6.55	261.9	21	No odour	No sheen	Grab sample
SW038	Drain	14/04/2020	4.03	418.6	7.9	320.6	24.9	No odour	No sheen	Grab sample
SW038	Drain	16/10/2020	-	-	7.31	286.1	26.5	Organic odour	No sheen	Grab sample
SW038	Drain	30/03/2021	4.04	760	7.63	321.4	29.8	Slight Organic Odour	No sheen	Grab sample
SW038	Drain	25/10/2021	5.71	536	7.45	307.4	27.1	No odour	Sheen	Grab sample
SW038	Drain	30/03/2022	7.72	52.3	7.45	358.8	23.9	No odour	No sheen	Grab sample
SW038	Drain	24/10/2022	8.56	203.8	6.96	155	21.3	No odour	No sheen	Grab sample
SW038	Drain	21/04/2023	-	-	-	-	-	-	-	Not sampled - dry
SW039	Bremer River	14/04/2020	5.77	312.3	7.77	527.7	17.5	Slight organic odour	No sheen	Grab sample
SW039	Bremer River	14/10/2020	8.39	445.6	8.12	248.7	23.5	Slight organic odour	No sheen	Grab sample
SW039	Bremer River	30/03/2021	5	175.3	7.18	273.9	25.3	No odour	No sheen	Grab sample
SW039	Bremer River	21/10/2021	4.11	181.1	6.59	340.3	20.7	No odour	No sheen	Grab sample
SW039	Bremer River	28/03/2022	4.6	628	7.73	268.1	23.6	No odour	No sheen	Grab sample
SW039	Bremer River	20/10/2022	4.79	616	7.09	215.9	20.5	No odour	No sheen	Grab sample
SW039	Bremer River	26/04/2023	-	1768	8.17	265.8	19.5	No odour	No sheen	Grab sample
SW040	Bremer River	14/04/2020	7.94	673	7.96	369.1	25.2	No odour	No sheen	Grab sample
SW040	Bremer River	15/10/2020	5.88	516	8.28	206.4	23.9	No odour	No sheen	Grab sample
SW040	Bremer River	15/04/2021	3.9	460.8	8.32	225	23.2	No odour	No sheen	Grab sample
SW040	Bremer River	19/10/2021	3.98	621	7.28	336.5	20.4	No odour	No sheen	Grab sample
SW040	Bremer River	28/03/2022	5.84	311.1	7.77	282.1	23.5	No odour	No sheen	Grab sample
SW040	Bremer River	20/10/2022	8.02	536.2	7.34	232.1	20.4	No odour	No sheen	Grab sample
SW040	Bremer River	18/04/2023	0.74	670	6.93	235.6	21.4	Organic odour	No sheen	Grab sample
SW041	Drain	15/04/2020	2.01	475.5	8.32	289.2	23.3	No odour	No sheen	Grab sample
SW041	Drain	15/10/2020	4.87	454.3	7.61	262	21.9	Slight organic odour	Biosheen appearance	Grab sample
SW041	Drain	30/03/2021	1.35	335.1	9.89	228.7	27.9	Slight Organic Odour	Biosheen Appearance	Grab sample
SW041	Drain	26/10/2021	1.58	294.5	7.66	240.2	25.2	Organic odour	Sheen	Grab sample
SW041	Drain	28/03/2022	7.86	183	7.86	317	22.8	No odour	No sheen	Grab sample
SW041	Drain	20/10/2022	6.59	185.8	7.63	188.4	20.2	No odour	No sheen	Grab sample
SW041	Drain	18/04/2023	0.37	266.2	7.12	237.4	29.2	No odour	Slight sheen	Grab sample
SW043	Warrill Creek	27/04/2020	5.25	575	8.84	207.5	20.8	No odour	No sheen	Grab sample
SW043	Warrill Creek	8/10/2020	-	-	-	-	-	-	-	Grab sample, data loss
SW043	Warrill Creek	14/04/2021	5.73	362.1	7.43	310.3	19.5	No odour	No sheen	Grab sample
SW043	Warrill Creek	21/10/2021	4.69	735	7.29	353.8	21.2	No odour	No sheen	Grab sample
SW043	Warrill Creek	4/04/2022	6.63		7.45	228.4	23.4	No odour	No sheen	Grab sample
SW043	Warrill Creek	20/10/2022	6.43	109.5	7.38	215	20.5	No odour	No sheen	Grab sample
SW043	Warrill Creek	19/04/2023	0.96	576	7	230.2	22.1	Organic odour	No sheen	Grab sample
SW045	Bremer River	15/04/2020	2.7	641	7.63	449.6	20.8	Slight organic odour	No sheen	Grab sample
SW045	Bremer River	8/10/2020	-	-	-	-	-	-	-	Grab sample, data loss
SW045	Bremer River	15/04/2021	4.41	338.1	7.96	288.5	19.8	Organic odour	No sheen	Grab sample
SW045	Bremer River	19/10/2021	3.71	706	7.28	327.6	20.4	No odour	No sheen	Grab sample
SW045	Bremer River	29/03/2022	5.48	425.6	7.54	258.3	22.8	No odour	No sheen	Grab sample
SW045	Bremer River	20/10/2022	6.51	532.9	7.51	221.1	20.5	No odour	No sheen	Grab sample
SW045	Bremer River	18/04/2023	0.82	586	7.07	238.3	21.7	Organic odour	No sheen	Grab sample
SW047	Bremer River	12/10/2020	7.17	302.1	9.18	225	22.8	No odour	No sheen	Grab sample
SW047	Bremer River	14/04/2021	3.51	223.5	7.04	320.5	20.1	No odour	No sheen	Grab sample
SW047	Bremer River	20/10/2021	3.61	228.2	6.71	341.6	20.2	No odour	No sheen	Grab sample
SW047	Bremer River	31/03/2022	4.66	373.2	7.63	298.8	22.6	No odour	No sheen	Grab sample
SW047	Bremer River	19/10/2022	5.31	796.1	7.15	179.9	20.5	No odour	No sheen	Grab sample
SW047	Bremer River	22/05/2023	6.3	1430	6.55	354.2	14.9	No odour	No sheen	Grab sample
SW047*	Bremer River	15/04/2020	-	-	-	-	-	Slight organic odour	No sheen	Grab sample
SW048	Drain	14/04/2020	-	-	-	-	-	-	-	Not sampled - dry
SW048	Drain	12/10/2020	-	-	-	-	-	-	-	Dry during three visits
SW048	Drain	12/04/2021	-	-	-	-	-	-	-	Dry- no sample collected
SW048	Drain	18/10/2021	-	-	-	-	-	-	-	Not sampled - dry
SW048	Drain	28/03/2022	8.58	20.2	7.86	525	23.5	No odour	No sheen	Grab sample
SW048	Drain	21/10/2022	5.97	33.6	7.48	204.5	21.3	No odour	No sheen	Grab sample
SW048	Drain	27/04/2023	2.53	467.9	7.96	297.6	20.6	No odour	No sheen	Grab sample
SW049	Drain	27/04/2020	3.33	227.8	8.62	241.3	21.3	Organic odour	No sheen	Grab sample
SW049	Drain	13/10/2020	3.05	344.7	7.23	226.1	27.7	No odour	No sheen	Grab sample
SW049	Drain	13/04/2021	6.2	248.3	7.42	315.4	27.3	No odour	No sheen	Grab sample
SW049	Drain	20/10/2021	2.96	271.2	7.27	304.3	26.6	No odour	No sheen	Grab sample
SW049	Drain	31/03/2022	2.59	94.7	6.38	289.7	23.5	No odour	No sheen	Grab sample
SW049	Drain	19/10/2022	5.89	168.7	7.32	234.2	22.4	No odour	No sheen	Grab sample
SW049	Drain	26/04/2023	-	196.9	7.34	234.7	22.7	No odour	No sheen	Grab sample
SW050	Bremer River	15/04/2020	8.9	409.3	8.94	297.5	26.2	No odour	No sheen	Grab sample
SW050	Bremer River	8/10/2020	-	-	-	-	-	-	-	Grab sample, data loss
SW050	Bremer River	14/04/2021	3.04	226.4	7.18	330.4	20.2	No odour	No sheen	Grab sample
SW050	Bremer River	19/10/2021	3.85	237.8	7.07	262.8	19.3	No odour	No sheen	Grab sample
SW050	Bremer River	1/04/2022	6.02	406.2	7.34	280.5	22.9	No odour	No sheen	Grab sample
SW050	Bremer River	20/10/2022	-	-	-	-	-	-	-	Not accessible due to site conditions
SW050	Bremer River	11/05/2023	1.44	253	7.08	253.2	23.5	No odour	No sheen	Grab sample
SW051	Bremer River	15/04/2020	1.81	475.9	7.94	216	20.9	No odour	Organic sheen	Grab sample
SW051	Bremer River	8/10/2020	-	-	-	-	-	-	-	Grab sample, data loss
SW051	Bremer River	12/04/2021	3.33	219.6	7.01	281.8	20.5	No odour	No sheen	Grab sample
SW051	Bremer River	19/10/2021	3.66	796	7.12	333.5	20.6	No odour	No sheen	Grab sample
SW051	Bremer River	1/04/2022	5.59	405.5	7.35	131	22.4	No odour	No sheen	Grab sample
SW051	Bremer River	20/10/2022	5.09	446.5	7.22	224.5	20.3	No odour	No sheen	Grab sample
SW051	Bremer River	19/04/2023	0.98	1017	7.15	457.5	20.5	Organic odour	No sheen	Grab sample
SW052	Bremer River	20/04/2020	2.28	294	7.82	245.1	20.9	Organic odour	No sheen	Grab sample
SW052	Bremer River	13/10/2020	1.41	301.9	7	175.3	23	Slight organic odour	No sheen	Grab sample
SW052	Bremer River	13/04/2021	3.71	220	7.14	311.6	21.5	No odour	No sheen	Grab sample
SW052	Bremer River	20/10/2021	3.03	237.1	6.82	338.7	20.4	No odour	No sheen	Grab sample
SW052	Bremer River	31/03/2022	5.75	405.3	7.5	304.2	22.5	No odour	No sheen	Grab sample
SW052	Bremer River	19/10/2022	4.53	513.5	7.23	202.9	20.6	No odour	No sheen	Grab sample
SW052	Bremer River	26/04/2023	-	550	7.56	213.2	20.9	No odour	No sheen	Grab sample
SW053	Drain	21/04/2020	5.52	843	8.62	216.5	26.2	No odour	No sheen	Grab sample
SW053	Drain	21/10/2020	4.86	353.1	8.26	243.1	26	No odour	No sheen	Grab sample
SW053	Drain	19/04/2021	6.66	372.2	9.15	331.7	26.6	No odour	No sheen	Grab sample
SW053	Drain	25/10/2021	7.01	340.8	7.06	247.1	26.8	No odour	No sheen	Grab sample
SW053	Drain	5/04/2022	9.8	419.9	8.33	148.5	28.1	No odour	No sheen	Grab sample
SW053	Drain	24/10/2022	7.75	402.6	6.63	149.8	22.5	No odour	No sheen	Grab sample
SW053	Drain	21/04/2023	0.88	506	7.02	281.1	22.3	Organic odour	No sheen	Grab sample
SW056	Drain	15/04/2020	0.18	539	7.19	197.8	24.5	Slight organic odour	No sheen	Grab sample
SW056	Drain	19/10/2020	2.71	387.2	7.38	247	27.2	No odour	No sheen	Grab sample
SW056	Drain	30/03/2021	3.49	406.9	7.51	301.2	26.9	No odour	No sheen	Grab sample
SW056	Drain	26/10/2021	0.14	402.8	7.1	153.4	22.5	Organic odour	No sheen	Grab sample
SW056	Drain	28/03/2022	4.53	205.2	7.09	214.6	22.6	No odour	No sheen	Grab sample
SW056	Drain	21/10/2022	3.84	319.9	7.19	215.9	21.1	No odour	No sheen	Grab sample
SW056	Drain	18/04/2023	0.39	202.6	7.11	236.1	25.4	No odour	No sheen	Grab sample
SW059	Drain	15/04/2020	-	-	-	-	-	-	-	Not sampled - dry
SW059	Drain	16/10/2020	-	-	7.23	310.2	34.5	No odour	No sheen	Grab sample
SW059	Drain	30/03/2021	-	927	7.29	71.4	26.5	Slight organic odour	Biosheen Appearance	Grab sample. DO field parameter not available due to data loss
SW059	Drain	26/10/2021	0.01	616	7.01	95.7	29.7	Organic odour	No sheen	Grab sample
SW059	Drain	28/03/2022	6.98	105.5	7.4	281.8	23.7	No odour	No sheen	Grab sample
SW059	Drain	21/10/2022	4.32	332.6	7.02	138.4	20.4	No odour	No sheen	Grab sample
SW059	Drain	17/04/2023	1.09	513	6.98	264.6	24.9	No odour	No sheen	Grab sample
SW064	Drain	14/04/2020	-	-	-	-	-	-	-	Not sampled - dry
SW064	Drain	20/10/2020	-	-	-	-	-	-	-	Not sampled - dry
SW064	Drain	18/04/2021	0.84	248.1	6.61	297.1	19.7	Organic odour	No sheen	Grab sample
SW064	Drain	25/10/2021	0.89	214.2	6.26	318.5	23.8	No odour	No sheen	Grab sample
SW064	Drain	4/04/2022	2.82	245	7.32	308.2	23.6	No odour	No sheen	Grab sample
SW064	Drain	24/10/2022	6.16	144.4	7.64	197.1	22	No odour	No sheen	Grab sample
SW064	Drain	21/04/2023	0.9	732	7.61	253.2	20	Organic odour	No sheen	Grab sample
SW067	Drain	21/04/2020	0.8	340.6	7.79	221.1	22.3	No odour	No sheen	Grab sample
SW067	Drain	20/10/2020	0.02	324.4	8.7	126	19.2	No odour	No sheen	Grab sample
SW067	Drain	19/04/2021	1.65	216.6	7.12	335.1	20.1	No odour	No sheen	Grab sample
SW067	Drain	25/10/2021	8.41	265.5	6.5	304.1	26.7	No odour	Slight sheen	Grab sample
SW067	Drain	6/04/2022	-	-	-	-	-	No odour	No sheen	Not sampled - dry
SW067	Drain	24/10/2022	5.17	125.6	7.11	194.8	27.7	No odour	No sheen	Grab sample
SW067	Drain	21/04/2023	0.78	683	7.08	262.2	20.1	Organic odour	No sheen	Grab sample
SW076	Drain	15/04/2020	4.85	371.8	7.85	392.6	19.5	Slight organic odour	No sheen	Grab sample
SW076	Drain	16/10/2020	-	-	-	-	-	-	-	Not enough water for parameters
SW076	Drain	30/03/2021	1.88	537	7.3	305.8	25.1	No odour	No sheen	Grab sample
SW076	Drain	26/10/2021	0.77	403.6	7.35	288.5	25.3	Sulfuric odour	No sheen	Grab sample
SW076	Drain	28/03/2022	2.22	222.1	7.13	258.8	22.3	No odour	No sheen	Grab sample
SW076	Drain	21/10/2022	-	-	-	-	-	-	-	Not sampled: In an exclusion zone for underground service repairs and road works.
SW076	Drain	18/04/2023	0.51	377.5	6.99	243.5	23.5	No odour	No sheen	Grab sample
SW079	Drain	21/04/2020	9.24	492.4	8.43	228.5	21.6	No odour	No sheen	Grab sample
SW079	Drain	20/10/2020	-	354.6	8.06	236.9	19.9	No odour	No sheen	Grab sample
SW079	Drain	19/04/2021	6.46	376	7.3	369.7	21.2	Organic odour	Biosheen Appearance	Grab sample

Table T3 Surface Water Quality Parameter Results, April 2020 to May 2023

Location ID	Location	Sample Date	DO (mg/L)	EC (µS/cm)	pH	Eh/(mV)	Temp (°C)	Odour	Sheen	Sample Method/Comments
SW079	Drain	25/10/2021	8.82	217.2	7.33	304.2	22.5	No odour	No sheen	Grab sample
SW079	Drain	5/04/2022	4.39	308.9	6.89	324.4	21.9	No odour	No sheen	Grab sample
SW079	Drain	24/10/2022	5.95	262.3	6.51	242.5	21.2	No odour	No sheen	Grab sample
SW079	Drain	21/04/2023	0.87	826.3	8.07	278.7	17.8	Organic odour	No sheen	Grab sample
SW080	Drain	21/04/2020	4.48	566	8.56	220.8	23.9	No odour	No sheen	Grab sample
SW080	Drain	21/10/2020	3.75	371.4	7.78	234.6	20.1	No odour	No sheen	Grab sample
SW080	Drain	19/04/2021	4.67	646	7.76	354.3	24.3	No odour	Biosheen Appearance	Grab sample
SW080	Drain	25/10/2021	0.12	309.3	6.72	263.2	23	Sulfuric odour	Sheen	Grab sample
SW080	Drain	5/04/2022	0.3	464.7	6.84	125.6	23.3	No odour	No sheen	Grab sample
SW080	Drain	24/10/2022	5.9	149.6	6.3	141.1	20	No odour	No sheen	Grab sample
SW080	Drain	21/04/2023	0.96	492.7	6.99	277.3	20	Organic odour	No sheen	Grab sample
SW088	Bremer River	20/04/2020	6.34	333.3	8.04	212.7	18.7	Organic odour	No sheen	Grab sample
SW088	Bremer River	12/10/2020	0.22	824	6.5	110.2	21.4	No odour	No sheen	Grab sample
SW088	Bremer River	13/04/2021	3.19	223.8	7.07	321.8	21.5	No odour	No sheen	Grab sample
SW088	Bremer River	20/10/2021	2.32	229.3	6.75	339.3	20.3	No odour	No sheen	Grab sample
SW088	Bremer River	31/03/2022	5.73	406.4	7.53	309.9	22.6	No odour	No sheen	Grab sample
SW088	Bremer River	19/10/2022	5.31	495.2	7.19	182.8	20.6	No odour	No sheen	Grab sample
SW088	Bremer River	22/05/2023	2.2	1439	6.03	443.4	13.9	No odour	No sheen	Grab sample
SW089	Bremer River	20/04/2020	5.61	315.4	8.04	241.4	18.1	No odour	No sheen	Grab sample
SW089	Bremer River	13/10/2020	-	-	-	-	-	-	-	Not sampled - dry
SW089	Bremer River	13/04/2021	3.17	227.6	7.51	211	21.9	No odour	No sheen	Grab sample
SW089	Bremer River	20/10/2021	2.3	240.5	6.86	338	20.5	No odour	No sheen	Grab sample
SW089	Bremer River	31/03/2022	5.91	404.9	7.19	317	22.4	No odour	No sheen	Grab sample
SW089	Bremer River	19/10/2022	1.41	332.2	6.94	201.7	19.1	No odour	No sheen	Grab sample
SW089	Bremer River	22/05/2023	8.4	1455	6.29	243.1	13.6	No odour	No sheen	Grab sample
SW090	Bremer River	20/04/2020	3.45	262.8	8.24	240.2	19.4	No odour	No sheen	Grab sample
SW090	Bremer River	13/10/2020	0.74	949	6.54	145.7	22	Slight organic odour	Biosheen appearance	Grab sample
SW090	Bremer River	13/04/2021	2.66	217.4	7.15	303.6	20.5	No odour	No sheen	Grab sample
SW090	Bremer River	21/10/2021	3.03	207.3	7.29	295.7	21.4	No odour	No sheen	Grab sample
SW090	Bremer River	31/03/2022	5.19	402.2	7.42	284.8	22.6	No odour	No sheen	Grab sample
SW090	Bremer River	21/10/2022	5.45	616	7.19	183	19.8	No odour	No sheen	Grab sample
SW090	Bremer River	22/05/2023	-	267.2	5.17	250.1	18	No odour	No sheen	Grab sample
SW091	Bremer River	20/04/2020	4.74	276.4	8.32	232.9	18.8	No odour	No sheen	Grab sample
SW091	Bremer River	13/10/2020	-	-	-	-	-	-	-	Not sampled - dry
SW091	Bremer River	31/03/2021	5.92	402.8	7.49	290.2	22.7	No odour	No sheen	Grab sample
SW091	Bremer River	13/04/2021	2.81	217.4	7.03	318.6	20.3	No odour	No sheen	Grab sample
SW091	Bremer River	21/10/2021	4.21	202.1	7.26	287.7	20.9	No odour	No sheen	Grab sample
SW091	Bremer River	21/10/2022	6.33	608	7.59	193.2	19.9	No odour	No sheen	Grab sample
SW091	Bremer River	22/05/2023	7.23	1545	6.55	364.2	13.8	No odour	No sheen	Grab sample
SW094	Bremer River	15/04/2020	0.93	354.4	7.75	145.6	22.4	Slight organic odour	No sheen	Grab sample
SW094	Bremer River	8/10/2020	-	-	-	-	-	-	-	Grab sample, data loss
SW094	Bremer River	14/04/2021	1.57	330.5	6.89	338.6	19.5	No odour	No sheen	Grab sample
SW094	Bremer River	22/10/2021	3.97	168.1	7.36	300	22.7	No odour	No sheen	Grab sample
SW094	Bremer River	1/04/2022	6.37	163.6	7.21	163.1	25.2	No odour	No sheen	Grab sample
SW094	Bremer River	19/10/2022	4.9	494.8	7.13	195.5	20.5	No odour	No sheen	Grab sample
SW094	Bremer River	22/05/2023	6	1239	6.9	352.6	16.5	No odour	No sheen	Grab sample
SW098	Bremer River	14/04/2020	3.2	363.4	7.8	450.1	19	No odour	No sheen	Grab sample
SW098	Bremer River	8/10/2020	-	-	-	-	-	-	-	Grab sample, data loss
SW098	Bremer River	15/04/2021	3.34	238.8	7.92	262.8	20.1	No odour	No sheen	Grab sample
SW098	Bremer River	19/10/2021	3.37	804	7.14	333.8	20.6	No odour	No sheen	Grab sample
SW098	Bremer River	1/04/2022	5.42	405.1	7.62	272.9	22.3	No odour	No sheen	Grab sample
SW098	Bremer River	20/10/2022	6.67	294.7	7.95	212.6	20	No odour	No sheen	Grab sample
SW098	Bremer River	18/04/2023	0.97	969	7.27	244.5	20.5	Organic odour	No sheen	Grab sample
SW099	Warrill Creek	21/04/2020	4.4	621	8.12	227	21	No odour	No sheen	Grab sample
SW099	Warrill Creek	8/10/2020	-	-	-	-	-	-	-	Grab sample, data loss
SW099	Warrill Creek	13/04/2021	5.75	359.4	7.37	323.3	20.8	No odour	No sheen	Grab sample
SW099	Warrill Creek	20/10/2021	3.92	346.4	7.15	309.3	22.7	No odour	No sheen	Grab sample
SW099	Warrill Creek	29/03/2022	6.04	464	7.7	225.3	22.7	No odour	No sheen	Grab sample
SW099	Warrill Creek	20/10/2022	6.69	660	7.26	226.8	20.3	No odour	No sheen	Grab sample
SW099	Warrill Creek	18/04/2023	1.08	622	7.61	231.5	20.4	Organic odour	No sheen	Grab sample
SW100	Warrill Creek	21/04/2020	4.8	603	8.31	238.7	20.1	Organic odour	No sheen	Grab sample
SW100	Warrill Creek	8/10/2020	-	-	-	-	-	-	-	Grab sample, data loss
SW100	Warrill Creek	13/04/2021	5.55	356.8	7.5	316.1	20.5	No odour	No sheen	Grab sample
SW100	Warrill Creek	20/10/2021	4.42	325.5	7.29	308.5	21.8	No odour	No sheen	Grab sample
SW100	Warrill Creek	29/03/2022	6.35	454.4	7.71	240.8	22.7	No odour	No sheen	Grab sample
SW100	Warrill Creek	20/10/2022	7.19	674	7.38	225.2	26.3	No odour	No sheen	Grab sample
SW100	Warrill Creek	19/04/2023	0.62	274.7	7.74	237.9	19.4	Organic odour	No sheen	Grab sample

Notes
DO - Dissolved Oxygen
EC - Electrical Conductivity
Er - Uncorrected Oxidation Reduction Potential
Eh - Corrected Oxidation Reduction Potential
` - no data
Er converted to Eh by adding 205 based on a YSI with Ag/AgCl sensor calibrated to a 3.5 molar KCL solution
mg/L - milligrams per litre
µS/cm - microsiemens per centimetre
mV - millivolts
°C - degrees Celsius
*Insufficient sample volume to collect water quality parameters

Table T4 Surface Water PFAS Analytical Results

				Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
				PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	Perfluorooctane sulfonic acid (PFOS) - Branched
	Units			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR			0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.002	0.002	0.002
HEPA (2020) Recreational Water Guideline Value														**10**																		**2**			
HEPA (2020) Freshwater 99% Species Protection								*0.00023*						*19*																					
HEPA (2020) Freshwater 95% Species Protection								*0.13*						*220*																					
Project ID	**Location**	**Date**	**Sample Type**																																	
QLD_0861_PFAS	SW002	29 Apr 2019	Normal	0.06	0.06	0.55	*<0.02*	*0.97*	*<0.02*	0.3	2.56	2.25	0.75	0.34	0.11	0.09	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	5.15	0.5	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	1.52	13.7	-	-
QLD_0861_PFASOMP	SW002	03 Nov 2020	Normal	0.2	0.12	0.99	0.03	*2.8*	0.08	2.3	9.05	9.7	3.56	0.91	0.17	0.46	0.9	0.83	0.15	*<0.05*	*<0.05*	32.7	3.19	0.32	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**3.79**	68.5	-	-
QLD_0861_PFASOMP	SW002	30 Mar 2021	Normal	0.17	0.16	1.13	0.05	*1.53*	*<0.02*	0.3	0.75	0.74	0.25	0.22	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	0.19	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**2.66**	5.52	-	-
QLD_0861_PFASOMP	SW002	25 Oct 2021	Normal	0.07	0.04	0.4	*<0.02*	*0.66*	*<0.02*	0.16	0.25	0.23	0.07	0.07	0.02	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	1.06	1.97	-	-
QLD_0861_PFASOMP	SW002	25 Oct 2021	Interlab_D	0.055	0.039	0.35	0.01	*0.6*	*<0.01*	0.15	0.21	0.17	0.064	0.048	0.017	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	0.044	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	-	-	-	-
QLD_0861_PFASOMP	SW002	25 Oct 2021	Field_D	0.07	0.04	0.39	*<0.02*	*0.64*	*<0.02*	0.15	0.24	0.24	0.07	0.06	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	1.03	1.93	-	-
QLD_0861_PFASOMP	SW002	28 Mar 2022	Normal	0.1	0.08	0.61	0.03	*1.02*	*<0.02*	0.2	0.34	0.38	0.16	0.19	0.05	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	0.08	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	1.63	3.24	-	-
QLD_0861_PFASOMP	SW002	21 Oct 2022	Normal	0.03	*<0.02*	0.19	*<0.02*	*0.31*	*<0.02*	*<0.1*	0.17	0.16	0.08	0.04	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.5	0.98	-	-
QLD_0861_PFASOMP_23	SW002	18 Apr 2023	Normal	0.03	0.03	0.15	*<0.02*	*0.33*	*<0.02*	*<0.1*	0.17	0.12	0.05	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.48	0.91	-	-
QLD_Hist_202012-3	SW003	01 Aug 2012	Normal	-	-	-	-	*6.37*	-	-	-	-	-	0.15	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW003	11 Oct 2012	Normal	-	-	-	-	*0.04*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW003	17 Jan 2013	Normal	-	-	-	-	*0.82*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW003	21 Aug 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW003	02 Mar 2017	Normal	*<0.02*	*<0.02*	0.05	*<0.02*	*0.04*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.09	0.09	-	-
QLD_0861_PFAS	SW003	29 Apr 2019	Normal	0.36	0.37	2.41	0.1	*3.06*	*<0.02*	0.2	0.61	1.02	0.24	0.32	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	0.43	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**5.47**	9.15	-	-
QLD_0861_PFASOMP	SW003	03 Nov 2020	Normal	0.26	0.2	1.73	0.12	*3.1*	*<0.02*	0.4	0.66	0.77	0.25	0.28	0.04	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	1.36	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**4.83**	9.17	-	-
QLD_0861_PFASOMP	SW003	30 Mar 2021	Normal	0.28	0.28	1.71	0.06	*1.39*	*<0.02*	0.3	0.76	0.9	0.21	0.19	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	0.18	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**3.1**	6.26	-	-
QLD_0861_PFASOMP	SW003	22 Oct 2021	Normal	0.1	0.08	0.58	0.03	*0.85*	*<0.02*	*<0.1*	0.16	0.24	0.04	0.06	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	1.43	2.14	-	-
QLD_0861_PFASOMP	SW003	28 Mar 2022	Normal	0.86	0.76	3.75	0.17	*3.2*	*<0.02*	0.3	1.03	1.89	0.42	0.58	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	0.18	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**6.95**	13.2	-	-
QLD_0861_PFASOMP	SW003	28 Mar 2022	Interlab_D	0.58	0.51	2.1	0.084	*1.6*	0.014	0.34	0.81	1.3	0.3	0.34	0.024	*<0.01*	0.014	0.032	0.042	0.039	*<0.01*	0.12	*<0.01*	*<0.01*	0.014	*<0.02*	0.027	*<0.05*	*<0.02*	0.039	*<0.05*	-	-	-	-
QLD_0861_PFASOMP	SW003	28 Mar 2022	Field_D	0.71	0.84	3.12	0.2	*2.94*	*<0.02*	0.4	1	1.69	0.46	0.41	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	0.16	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**6.06**	12	-	-
QLD_0861_PFASOMP	SW003	21 Oct 2022	Normal	*<0.02*	*<0.02*	0.1	*<0.02*	*0.33*	*<0.02*	*<0.1*	0.06	0.06	0.03	0.02	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.43	0.6	-	-
QLD_0861_PFASOMP_23	SW003	18 Apr 2023	Normal	0.16	0.13	0.84	0.05	*1.47*	*<0.02*	*<0.1*	0.2	0.33	0.08	0.1	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**2.31**	3.36	-	-
QLD_0861_PFAS	SW004	31 May 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.02	0.02	*<0.01*	0.01
QLD_0861_PFAS	SW004	02 May 2019	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFAS	SW004	18 Nov 2019	Normal	*<0.02*	*<0.02*	0.04	*<0.02*	*0.07*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.11	0.11	-	-
QLD_0861_PFASOMP	SW004	14 Apr 2020	Normal	*<0.02*	*<0.02*	0.03	*<0.02*	*0.05*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.08	0.08	-	-
QLD_0861_PFASOMP	SW004	12 Oct 2020	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*0.02*	*<0.02*	*<0.10*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.02	0.02	-	-
QLD_0861_PFASOMP	SW004	19 Oct 2021	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.01	0.01	-	-
QLD_0861_PFASOMP	SW004	29 Mar 2022	Normal	*<0.02*	*<0.02*	0.04	*<0.02*	*0.1*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.14	0.14	-	-
QLD_0861_PFASOMP	SW004	18 Oct 2022	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP_23	SW004	28 Apr 2023	Normal	*<0.02*	*<0.02*	0.02	*<0.02*	*0.03*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.05	0.05	-	-
QLD_0861_PFAS	SW005	31 May 2017	Normal	0.05	0.04	0.3	*<0.02*	*1.34*	*<0.02*	*<0.1*	*<0.02*	0.07	*<0.02*	0.02	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	1.64	1.82	1.06	0.28
QLD_0861_PFAS	SW005	30 Apr 2019	Normal	0.22	0.21	1.74	0.06	*3.02*	*<0.02*	*<0.1*	0.12	0.36	0.04	0.07	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**4.76**	5.84	-	-
QLD_0861_PFAS	SW005	18 Nov 2019	Normal	*<0.02*	*<0.02*	0.03	*<0.02*	*0.05*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.08	0.08	-	-
QLD_0861_PFASOMP	SW005	14 Apr 2020	Normal	*<0.02*	*<0.02*	0.03	*<0.02*	*0.07*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.1	0.1	-	-
QLD_0861_PFASOMP	SW005	12 Oct 2020	Normal	0.25	0.18	1.5	0.06	*2.78*	*<0.02*	*<0.10*	0.14	0.41	0.04	0.08	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**4.28**	5.44	-	-
QLD_0861_PFASOMP	SW005	12 Apr 2021	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*0.05*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.05	0.05	-	-
QLD_0861_PFASOMP	SW005	19 Oct 2021	Normal	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_0861_PFASOMP	SW005	29 Mar 2022	Normal	*<0.02*	*<0.02*	0.02	*<0.02*	*0.1*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.12	0.12	-	-
QLD_0861_PFASOMP	SW005	18 Oct 2022	Normal	0.09	0.07	0.51	0.03	*1.23*	*<0.02*	*<0.1*	0.04	0.13	*<0.02*	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	1.74	2.13	-	-
QLD_0861_PFASOMP	SW005	18 Oct 2022	Interlab_D	0.051	0.037	0.31	*<0.01*	*0.65*	*<0.01*	*<0.05*	*<0.02*	0.061	*<0.01*	0.017	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	-	-	-	-
QLD_0861_PFASOMP	SW005	18 Oct 2022	Field_D	0.09	0.07	0.5	0.03	*1.26*	*<0.02*	*<0.1*	0.04	0.13	*<0.02*	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	1.76	2.15	-	-
QLD_0861_PFASOMP_23	SW005	28 Apr 2023	Normal	1.53	1.11	6.22	0.27	*11.4*	*<0.02*	0.5	0.53	1.41	0.13	0.25	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.02*	*<0.06*	**17.6**	23.4	-	-
QLD_0861_PFAS	SW006	05 Jun 2017	Normal	*<0.02*	*<0.02*	0.08	*<0.02*	*0.17*	*<0.02*	*<0.1*	*<0.02*	0.02	*<0.02*	0.01	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.25	0.28	0.1	0.07
QLD_0861_PFAS	SW006	07 Mar 2018	Normal	0.16	0.15	0.82	0.05	*1.77*	*<0.02*	*<0.1*	0.1	0.19	0.05	0.05	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**2.59**	3.34	1.39	0.38
QLD_0861_PFAS	SW006	07 Mar 2018	Normal	0.14	0.15	0.93	0.05	*1.58*	*<0.02*	*<0.1*	0.05	0.2	0.05	0.06	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**2.51**	3.21	-	-
QLD_0861_PFAS	SW007	31 May 2017	Normal	0.07	0.03	0.17	*<0.02*	*0.32*	*<0.02*	*<0.1*	*<0.02*	0.04	*<0.02*	0.04	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.49	0.67	0.24	0.08
QLD_0861_PFAS	SW007	10 May 2019	Normal	0.05	0.03	0.21	*<0.02*	*0.45*	*<0.02*	*<0.1*	0.02	0.05	*<0.02*	0.04	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.66	0.85	-	-
QLD_Hist_202012-3	SW008	26 Jul 2012	Normal	-	-	-	-	*7.02*	-	-	-	-	-	0.68	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW008	09 Oct 2012	Normal	-	-	-	-	*0.75*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW008	16 Jan 2013	Normal	-	-	-	-	*4.27*	-	-	-	-	-	0.09	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW008	09 Aug 2013	Normal	-	-	-	-	*3.71*	-	-	-	-	-	0.29	-	-	-	-	-	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW008	02 Mar 2017	Normal	0.15	0.05	0.74	*<0.02*	*0.53*	*<0.02*	*<0.1*	0.08	0.12	0.04	0.22	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	1.27	1.93	-	-
QLD_0861_PFAS	SW008	31 May 2017	Normal	0.35	0.3	1.72	0.09	*1.75*	0.13	*<0.1*	0.27	0.68	0.13	0.2	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	0.11	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	**3.47**	5.73	1.05	0.7
QLD_Hist_202012-3	SW008	13 Oct 2017	Normal	0.04	0.03	0.23	*<0.02*	*0.41*	*<0.02*	*<0.1*	*<0.02*	0.04	*<0.02*	0.04	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.64	0.79	-	-
QLD_0861_PFAS	SW008	02 May 2019	Normal	0.14	0.06	0.37	*<0.02*	*0.37*	*<0.02*	*<0.1*	0.07	0.16	0.02	0.04	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.74	1.23	-	-
QLD_0861_PFASOMP	SW008	17 Apr 2020	Interlab_D	0.085	0.065	0.45	0.014	*0.78*	*<0.01*	0.052	0.16	0.22	0.052	0.067	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.02*	*<0.01*	0.16	*<0.01*	*<0.01*	*<0.01*	*<0.02*	*<0.01*	*<0.05*	*<0.02*	*<0.01*	*<0.05*	-	-	-	-
QLD_0861_PFASOMP	SW008	17 Apr 2020	Field_D	0.12	0.09	0.51	0.03	*1*	*<0.02*	*<0.1*	0.16	0.24	0.05	0.08	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	0.2	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	1.51	2.48	-	-
QLD_0861_PFASOMP	SW008	03 Nov 2020	Normal	0.08	0.06	0.37	*<0.04*	*1.06*	*<0.04*	*<0.3*	0.07	0.12	0.05	0.06	*<0.04*	*<0.04*	*<0.04*	*<0.04*	*<0.04*	*<0.09*	*<0.05*	0.06	*<0.05*	*<0.05*	*<0.04*	*<0.09*	*<0.04*	*<0.09*	*<0.09*	*<0.04*	*<0.09*	1.43	1.93	-	-
QLD_0861_PFASOMP	SW008	15 Apr 2021	Normal	0.04	0.03	0.16	*<0.02*	*0.37*	*<0.02*	*<0.1*	0.02	0.03	*<0.02*	0.02	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.53	0.67	-	-
QLD_0861_PFASOMP	SW008	26 Oct 2021	Normal	0.08	0.03	0.26	*<0.02*	*0.41*	*<0.02*	*<0.10*	*<0.04*	0.05	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.67	0.83	-	-
QLD_0861_PFASOMP	SW008	28 Mar 2022	Normal	0.03	*<0.02*	0.12	*<0.02*	*0.22*	*<0.02*	*<0.1*	*<0.02*	0.04	*<0.02*	0.02	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	0.34	0.43	-	-
QLD_0861_PFASOMP	SW008	26 Oct 2022	Normal	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*0.07*	*<0.05*	*<0.2*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.13*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.13*	*<0.05*	*<0.13*	*<0.13*	*<0.05*	*<0.13*	0.07	0.07	-	-
QLD_0861_PFASOMP_23	SW008	27 Apr 2023	Normal	0.14	0.08	0.51	0.03	*0.93*	*<0.02*	*<0.1*	0.13	0.23	0.04	0.07	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	0.05	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	1.44	2.21	-	-
QLD_0861_PFAS	SW009	31 May 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	Perfluorooctane sulfonic acid (PFOS) - Branched
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.002	0.002	0.002
HEPA (2020) Recreational Water Guideline Value												**10**																		**2**			
HEPA (2020) Freshwater 99% Species Protection						*0.00023*						*19*																					
HEPA (2020) Freshwater 95% Species Protection						*0.13*						*220*																					
Project ID	**Location**	**Date**	**Sample Type**																															
QLD_0861_PFAS	SW011	15 Sep 2017	Normal	0.19	0.16	1.18	0.04	*2.01*	<0.02	<0.1	<0.02	0.33	0.04	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.19**	4.03	1.17	0.83
QLD_Hist_202012-3	SW011	06 Oct 2017	Normal	0.24	0.33	2.67	0.08	*1.66*	<0.02	<0.1	<0.02	0.64	0.15	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.33**	5.88	-	-
QLD_0861_PFAS	SW011	01 May 2019	Normal	0.22	0.26	2.17	0.09	*2.26*	<0.02	0.4	0.92	1.1	0.4	0.26	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	2.09	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.43**	10.2	-	-
QLD_0861_PFASOMP	SW011	14 Apr 2020	Normal	0.03	0.02	0.25	<0.02	*0.4*	<0.02	<0.1	0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.65	0.78	-	-
QLD_0861_PFASOMP	SW011	03 Nov 2020	Normal	0.16	0.12	1.35	0.08	*1.91*	<0.02	<0.3	0.35	0.43	0.12	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.2	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.26**	4.84	-	-
QLD_0861_PFASOMP	SW011	30 Mar 2021	Normal	0.37	0.42	4.44	0.19	*5.28*	<0.02	0.4	1.06	1.39	0.36	0.36	0.05	0.02	<0.02	<0.02	<0.02	<0.05	<0.05	3.33	0.1	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**9.72**	17.8	-	-
QLD_0861_PFASOMP	SW011	26 Oct 2021	Normal	0.18	0.16	1.72	0.09	*2.15*	<0.02	0.1	0.17	0.38	0.06	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.87**	5.12	-	-
QLD_0861_PFASOMP	SW011	28 Mar 2022	Normal	0.13	0.12	0.99	0.06	*1.49*	<0.02	<0.1	0.29	0.39	0.12	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	1.06	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.48**	4.78	-	-
QLD_0861_PFASOMP_23	SW011	17 Apr 2023	Normal	0.28	0.31	3.15	0.16	*6.57*	<0.02	0.1	0.21	0.62	0.1	0.16	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**9.72**	11.7	-	-
QLD_0861_PFAS	SW014	05 Jun 2017	Normal	<0.02	<0.02	0.03	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	0.01	<0.01
QLD_0861_PFAS	SW015	05 Jun 2017	Normal	<0.02	<0.02	0.03	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	<0.01	0.01
QLD_0861_PFAS	SW015	30 Apr 2019	Normal	<0.02	<0.02	0.02	<0.02	*0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03	-	-
QLD_0861_PFAS	SW015	18 Nov 2019	Normal	<0.02	<0.02	0.03	<0.02	*0.06*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09	-	-
QLD_0861_PFASOMP	SW015	14 Apr 2020	Normal	<0.02	<0.02	0.03	<0.02	*0.05*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.08	-	-
QLD_0861_PFASOMP	SW015	12 Oct 2020	Normal	<0.02	<0.02	<0.02	<0.02	*0.02*	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	-	-
QLD_0861_PFASOMP	SW015	12 Apr 2021	Normal	<0.02	<0.02	0.02	<0.02	*0.03*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	-	-
QLD_0861_PFASOMP	SW015	19 Oct 2021	Normal	<0.02	<0.02	0.01	<0.02	*0.04*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	-	-
QLD_0861_PFASOMP	SW015	29 Mar 2022	Normal	<0.02	<0.02	0.02	<0.02	*0.07*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09	-	-
QLD_0861_PFASOMP	SW015	18 Oct 2022	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP_23	SW015	26 Apr 2023	Normal	<0.02	<0.02	0.01	<0.02	*0.04*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	-	-
QLD_0861_PFAS	SW016	05 Jun 2017	Normal	0.15	0.1	0.78	0.05	*2.6*	<0.02	<0.1	<0.02	0.17	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.38**	3.92	1.8	0.8
QLD_0861_PFAS	SW016	30 Apr 2019	Normal	<0.02	<0.02	0.03	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03	-	-
QLD_0861_PFAS	SW016	18 Nov 2019	Normal	<0.02	<0.02	0.03	<0.02	*0.06*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09	-	-
QLD_0861_PFASOMP	SW016	14 Apr 2020	Normal	<0.02	<0.02	<0.02	<0.02	*0.05*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	-	-
QLD_0861_PFASOMP	SW016	12 Oct 2020	Normal	<0.02	<0.02	<0.02	<0.02	*0.06*	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06	-	-
QLD_0861_PFASOMP	SW016	12 Apr 2021	Normal	<0.02	<0.02	0.02	<0.02	*0.04*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06	-	-
QLD_0861_PFASOMP	SW016	12 Apr 2021	Interlab_D	<0.01	<0.01	0.017	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-	-
QLD_0861_PFASOMP	SW016	12 Apr 2021	Field_D	<0.02	<0.02	0.02	<0.02	*0.03*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	-	-
QLD_0861_PFASOMP	SW016	19 Oct 2021	Normal	<0.02	<0.02	<0.01	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	-	-
QLD_0861_PFASOMP	SW016	29 Mar 2022	Normal	<0.02	<0.02	0.02	<0.02	*0.05*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	0.07	-	-
QLD_0861_PFASOMP	SW016	18 Oct 2022	Normal	<0.02	<0.02	<0.01	<0.02	*0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01	-	-
QLD_0861_PFASOMP_23	SW016	28 Apr 2023	Normal	<0.02	<0.02	0.02	<0.02	*0.04*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06	-	-
QLD_0861_PFAS	SW017	05 Jun 2017	Normal	<0.02	<0.02	0.06	<0.02	*0.05*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.11	0.11	0.03	0.02
QLD_0861_PFAS	SW018	01 Jun 2017	Normal	<0.02	<0.02	0.02	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	0.01	<0.01
QLD_0861_PFAS	SW018	30 Apr 2019	Normal	<0.02	<0.02	<0.02	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	-	-
QLD_0861_PFAS	SW018	19 Nov 2019	Normal	0.04	<0.02	0.1	<0.02	*0.12*	<0.02	<0.1	<0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.22	0.32	-	-
QLD_0861_PFASOMP	SW018	14 Apr 2020	Normal	<0.02	<0.02	0.02	<0.02	*0.04*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06	-	-
QLD_0861_PFASOMP	SW018	12 Oct 2020	Normal	<0.02	<0.02	<0.02	<0.02	*0.03*	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03	-	-
QLD_0861_PFASOMP	SW018	12 Apr 2021	Normal	<0.02	<0.02	<0.02	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	-	-
QLD_0861_PFASOMP	SW018	19 Oct 2021	Normal	<0.02	<0.02	0.01	<0.02	*0.03*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	-	-
QLD_0861_PFASOMP	SW018	29 Mar 2022	Normal	<0.02	<0.02	0.05	<0.02	*0.07*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.12	-	-
QLD_0861_PFASOMP	SW018	18 Oct 2022	Normal	<0.02	<0.02	<0.01	<0.02	<0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP_23	SW018	28 Apr 2023	Normal	1.62	1.38	7.66	0.3	*8.47*	<0.02	0.6	0.68	1.47	0.12	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	**16.1**	22.4	-	-
QLD_0861_PFAS	SW019	01 Jun 2017	Normal	<0.02	<0.02	0.03	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	0.01	0.01
QLD_0861_PFAS	SW020	01 Jun 2017	Normal	<0.02	<0.02	0.03	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	0.02	<0.01
QLD_0861_PFAS	SW020	30 Apr 2019	Normal	<0.02	<0.02	<0.02	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	-	-
QLD_0861_PFAS	SW020	19 Nov 2019	Normal	0.04	<0.02	0.09	<0.02	*0.11*	<0.02	<0.1	<0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.2	0.3	-	-
QLD_0861_PFAS	SW020	20 Nov 2019	Normal	0.03	<0.02	0.09	<0.02	*0.14*	<0.02	<0.1	<0.02	0.05	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.23	0.33	-	-
QLD_0861_PFASOMP	SW020	14 Apr 2020	Normal	<0.02	<0.02	0.02	<0.02	*0.04*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06	-	-
QLD_0861_PFASOMP	SW020	12 Oct 2020	Normal	<0.02	<0.02	<0.02	<0.02	*0.03*	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03	-	-
QLD_0861_PFASOMP	SW020	12 Oct 2020	Interlab_D	<0.01	<0.01	0.018	<0.01	*0.034*	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-	-
QLD_0861_PFASOMP	SW020	12 Oct 2020	Field_D	<0.02	<0.02	<0.02	<0.02	*0.03*	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03	-	-
QLD_0861_PFASOMP	SW020	12 Apr 2021	Normal	<0.02	<0.02	<0.02	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	-	-
QLD_0861_PFASOMP	SW020	19 Oct 2021	Normal	<0.02	<0.02	0.01	<0.02	*0.04*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	-	-
QLD_0861_PFASOMP	SW020	29 Mar 2022	Normal	<0.02	<0.02	0.04	<0.02	*0.07*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.11	0.11	-	-
QLD_0861_PFASOMP	SW020	18 Oct 2022	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP_23	SW020	28 Apr 2023	Normal	<0.02	<0.02	0.03	<0.02	*0.05*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.08	-	-
QLD_0861_PFAS	SW021	14 Sep 2017	Normal	0.83	0.95	6.98	0.42	*17.9*	0.12	1	2.41	5.52	0.97	1.49	0.13	0.06	0.05	<0.02	<0.02	<0.05	<0.05	<0.05	0.11	<0.05	0.05	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**24.9**	39	13	4.84
QLD_0861_PFASOMP	SW021	20 Apr 2020	Normal	0.39	0.47	4.98	0.35	*23.1*	0.58	<0.3	0.44	1.02	0.23	0.75	0.11	<0.06	<0.06	<0.06	<0.06	<0.16	<0.06	<0.06	<0.06	<0.06	<0.06	<0.16	<0.06	<0.16	<0.16	<0.06	<0.16	**28.1**	32.4	-	-
QLD_0861_PFASOMP	SW021	03 Nov 2020	Normal	1.76	2.05	17.9	1.05	*40.9*	<0.10	1.7	3.19	5.27	0.96	2.35	0.27	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	**58.8**	77.4	-	-
QLD_0861_PFASOMP	SW021	03 Nov 2020	Field_D	1.72	2.03	16.6	1.32	*38.2*	0.23	2.3	2.76	4.95	0.84	2.18	0.29	0.05	0.03	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**54.8**	73.6	-	-
QLD_0861_PFASOMP	SW021	30 Mar 2021	Normal	5.85	5.28	23	0.73	*16.4*	0.05	2.8	5.89	18.5	2.65	3.25	0.08	0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.1	<0.05	<0.05	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**39.4**	84.6	-	-
QLD_0861_PFASOMP	SW021	21 Oct 2021	Normal	1.01	0.74	5.2	0.26	*9.5*	0.31	0.7	1.4	2.77	0.41	0.8	0.05	<0.02	<0.02	<0.02	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	**14.7**	23.2	-	-
QLD_0861_PFASOMP	SW021	31 Mar 2022	Normal	1.35	1.35	8.6	0.37	*13.3*	<0.05	0.7	1.74	4.58	0.74	1.6	0.05	<0.02	<0.02	<0.02	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	0.03	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	**21.9**	34.4	-	-
QLD_0861_PFASOMP	SW021	21 Oct 2022	Normal	1.08	1.39	9.98	0.56	*14.6*	0.08	0.9	1.78	4.66	0.67	1.94	0.1	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**24.6**	37.7	-	-
QLD_0861_PFASOMP_23	SW021	26 Apr 2023	Normal	1.96	1.74	8.68	0.38	*12*	<0.02	1.4	1.87	3.07	0.49	0.82	0.09	<0.02	<0.02	<0.02	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	**20.7**	32.5	-	-
QLD_0861_PFAS	SW022	31 May 2017	Normal	0.23	0.23	1.66	0.11	*4.38*	<0.02	<0.1	0.21	0.48	0.08	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.22	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**6.04**	7.72	3.1	1.28
QLD_0861_PFAS	SW023	31 May 2017	Normal	0.26	0.26	2.3	0.13	*4.81*	<0.02	<0.1	0.09	0.34	0.05	0.11	<0.02	<0.02

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	Perfluorooctane sulfonic acid (PFOS) - Branched
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.002	0.002	0.002
HEPA (2020) Recreational Water Guideline Value												**10**																		**2**			
HEPA (2020) Freshwater 99% Species Protection						*0.00023*						*19*																					
HEPA (2020) Freshwater 95% Species Protection						*0.13*						*220*																					
Project ID	**Location**	**Date**	**Sample Type**																															
QLD_0861_PFAS	SW026	07 May 2019	Normal	<0.02	<0.02	0.05	<0.02	***0.06***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.11	0.11	-	-
QLD_0861_PFAS	SW026	27 Nov 2019	Normal	0.02	<0.02	0.06	<0.02	***0.12***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.18	0.2	-	-
QLD_0861_PFAS	SW026	27 Nov 2019	Interlab_D	<0.01	<0.01	0.07	<0.01	***0.13***	<0.02	<0.02	<0.02	0.02	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.05	<0.1	<0.5	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.02	<0.05	<0.1	<0.02	<0.5	0.2	0.22	-	-
QLD_0861_PFAS	SW026	27 Nov 2019	Field_D	0.02	<0.02	0.06	<0.02	***0.12***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.18	0.2	-	-
QLD_0861_PFASOMP	SW026	21 Apr 2020	Normal	<0.02	<0.02	0.09	<0.02	***0.14***	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.23	0.26	-	-
QLD_0861_PFASOMP	SW026	15 Oct 2020	Normal	<0.02	<0.02	0.04	<0.02	***0.07***	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.11	0.11	-	-
QLD_0861_PFASOMP	SW026	16 Apr 2021	Normal	<0.02	<0.02	<0.02	<0.02	***0.03***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03	-	-
QLD_0861_PFASOMP	SW026	20 Oct 2021	Normal	<0.02	<0.02	0.02	<0.02	***0.05***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	0.07	-	-
QLD_0861_PFASOMP	SW026	01 Apr 2022	Normal	<0.02	<0.02	<0.01	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	-	-
QLD_0861_PFASOMP	SW026	20 Oct 2022	Normal	0.03	0.03	0.23	<0.02	***0.35***	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.58	0.72	-	-
QLD_0861_PFASOMP_23	SW026	19 Apr 2023	Normal	<0.02	<0.02	0.04	<0.02	***0.09***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.13	-	-
QLD_0861_PFASOMP	SW027	30 Mar 2021	Normal	0.26	0.29	2.18	0.08	***1.21***	<0.02	0.2	0.38	0.64	0.16	0.17	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.39**	5.57	-	-
QLD_0861_PFASOMP	SW027	26 Oct 2021	Normal	0.06	0.06	0.44	0.02	***0.55***	<0.02	<0.1	0.1	0.15	0.05	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.99	1.48	-	-
QLD_0861_PFASOMP	SW027	28 Mar 2022	Normal	1.87	2.32	21.5	1.11	***14***	<0.02	0.4	0.95	4.98	0.48	1.22	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	**35.5**	48.8	-	-
QLD_0861_PFASOMP	SW027	21 Oct 2022	Normal	<0.02	<0.02	0.08	<0.02	***0.16***	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.24	0.28	-	-
QLD_0861_PFASOMP_23	SW027	17 Apr 2023	Normal	0.03	0.03	0.26	<0.02	***0.77***	<0.02	<0.1	0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.03	1.2	-	-
QLD_0861_PFAS	SW028	01 Jun 2017	Normal	0.02	<0.02	0.13	<0.02	***0.32***	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.45	0.49	0.23	0.09
QLD_0861_PFAS	SW028	02 May 2019	Normal	<0.02	<0.02	0.12	<0.02	***0.18***	<0.02	<0.1	<0.02	<0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.3	0.32	-	-
QLD_0861_PFASOMP	SW028	14 Apr 2020	Normal	0.12	0.06	0.81	0.02	***0.76***	<0.02	<0.10	<0.02	0.14	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.57	1.93	-	-
QLD_0861_PFASOMP	SW028	14 Apr 2020	Interlab_D	0.11	0.061	0.61	0.011	***0.63***	<0.01	0.061	0.027	0.055	<0.01	0.018	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.01	<0.05	-	-	-	-	-	-
QLD_0861_PFASOMP	SW028	14 Apr 2020	Field_D	0.14	0.06	0.64	0.02	***0.75***	<0.02	<0.10	0.03	0.05	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.39	1.72	-	-
QLD_0861_PFASOMP	SW028	03 Nov 2020	Normal	0.07	0.03	0.29	<0.02	***0.44***	<0.02	<0.2	<0.02	0.05	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.73	0.92	-	-
QLD_0861_PFASOMP	SW028	12 Apr 2021	Normal	0.07	0.04	0.31	<0.02	***0.45***	<0.02	<0.1	0.03	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.48	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.76	1.43	-	-
QLD_0861_PFASOMP	SW028	19 Oct 2021	Normal	0.06	0.02	0.27	<0.02	***0.71***	<0.02	<0.1	0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.98	1.13	-	-
QLD_0861_PFASOMP	SW028	19 Oct 2021	Interlab_D	0.048	0.028	0.24	<0.01	***0.55***	<0.01	0.052	0.022	0.033	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.01	<0.05	-	-	-	-	-	-
QLD_0861_PFASOMP	SW028	19 Oct 2021	Field_D	0.05	0.02	0.25	<0.02	***0.57***	<0.02	<0.1	0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.82	0.96	-	-
QLD_0861_PFASOMP	SW028	29 Mar 2022	Normal	<0.02	<0.02	0.04	<0.02	***0.08***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.12	-	-
QLD_0861_PFASOMP_23	SW028	09 May 2023	Normal	0.03	<0.02	0.13	<0.02	***0.3***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.43	0.46	-	-
QLD_0861_PFAS	SW029	01 Jun 2017	Normal	<0.02	<0.02	<0.02	<0.02	***0.01***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01	<0.01	<0.01
QLD_0861_PFAS	SW030	29 Apr 2019	Normal	0.21	0.21	2.01	0.08	***1.44***	<0.02	0.1	0.48	0.63	0.18	0.14	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.45**	5.59	-	-
QLD_0861_PFASOMP	SW030	03 Nov 2020	Normal	0.09	0.07	0.66	0.02	***0.61***	<0.02	0.2	0.16	0.2	0.04	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.27	2.09	-	-
QLD_0861_PFASOMP	SW030	30 Mar 2021	Normal	0.47	0.52	5.18	0.23	***4.46***	<0.02	0.4	1.17	1.67	0.38	0.36	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	1.99	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**9.64**	16.9	-	-
QLD_0861_PFASOMP	SW030	26 Oct 2021	Normal	1.18	0.81	6.06	0.34	***7.68***	<0.02	0.77	1.69	2.91	0.5	0.59	0.04	0.02	<0.02	0.04	<0.02	<0.02	<0.05	<0.05	0.72	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**13.7**	23.4	-	-
QLD_0861_PFASOMP	SW030	28 Mar 2022	Normal	0.18	0.14	1	0.06	***2.29***	<0.02	<0.1	0.12	0.29	0.06	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.14	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.29**	4.37	-	-
QLD_0861_PFASOMP	SW030	21 Oct 2022	Normal	0.51	0.59	4.74	0.32	***5***	<0.02	0.2	0.44	1.27	0.24	0.3	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.69	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**9.74**	14.3	-	-
QLD_0861_PFASOMP_23	SW030	17 Apr 2023	Normal	0.16	0.16	1.35	0.09	***2.52***	<0.02	0.1	0.31	0.43	0.11	0.13	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.37	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.87**	5.75	-	-
QLD_Hist_202012-3	SW031	02 Aug 2012	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW031	10 Oct 2012	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW031	18 Jan 2013	Normal	-	-	-	-	***0.9***	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW031	20 Aug 2013	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW031	02 Mar 2017	Normal	<0.02	<0.02	0.08	<0.02	***0.04***	<0.02	<0.1	<0.02	0.02	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.12	0.16	-	-
QLD_Hist_202012-3	SW031	17 Oct 2017	Normal	0.05	<0.02	0.15	<0.02	***0.24***	<0.02	<0.1	<0.02	0.05	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.39	0.51	-	-
QLD_Hist_202012-3	SW032	02 Aug 2012	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW032	10 Oct 2012	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW032	20 Aug 2013	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW032	02 Mar 2017	Normal	1.64	0.74	4.82	0.23	***6.56***	<0.02	<0.1	0.37	0.75	0.09	0.42	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.12	0.13	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**11.4**	15.9	-	-
QLD_Hist_202012-3	SW032	16 Oct 2017	Normal	0.46	0.34	1.62	0.06	***1.68***	<0.02	<0.1	<0.02	0.26	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.3**	4.45	-	-
QLD_0861_PFAS	SW033	14 Sep 2017	Normal	0.35	0.33	1.92	0.17	***9.54***	0.13	0.6	1.34	3.24	0.47	0.75	0.05	0.04	0.06	0.03	<0.02	<0.05	<0.05	<0.05	0.26	<0.05	0.08	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	**11.5**	19.4	6.96	2.58
QLD_0861_PFAS	SW033	03 May 2019	Normal	0.62	0.67	4.53	0.26	***9.23***	<0.02	1	2.01	4.27	0.84	1.38	0.18	0.1	0.04	<0.02	<0.02	<0.02	<0.05	<0.05	0.07	0.46	<0.05	0.19	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**13.8**	25.8	-	-
QLD_0861_PFASOMP	SW033	27 Apr 2020	Normal	0.07	0.12	1.01	0.08	***3.5***	0.04	<0.1	0.14	0.38	0.08	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.08	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.51**	5.7	-	-
QLD_0861_PFASOMP	SW033	15 Apr 2021	Normal	6.82	8	44.2	1.52	***63.8***	0.66	3.2	6.11	23.3	3.35	7.7	0.16	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	0.14	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	**108**	169	-	-
QLD_0861_PFASOMP	SW033	26 Oct 2021	Normal	2.54	2.94	22.1	0.89	***78.6***	0.47	1.96	3.05	8.49	0.94	2.7	0.08	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.11	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**101**	125	-	-
QLD_0861_PFASOMP	SW033	05 Apr 2022	Normal	3.38	4.96	28.6	0.87	***31.4***	0.67	<1.7	3.17	12.5	1.88	4.52	0.08	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	0.24	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	**60**	92.3	-	-
QLD_0861_PFASOMP	SW033	25 Oct 2022	Normal	0.6	0.74	5.27	0.27	***17.1***	0.26	0.7	0.85	2.58	0.37	0.88	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.16	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**22.4**	29.8	-	-
QLD_0861_PFASOMP	SW033	25 Oct 2022	Interlab_D	0.46	0.53	3.4	0.16	***10***	0.032	0.47	0.63	1.4	0.2	0.5	0.02	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	0.084	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-	-
QLD_0861_PFASOMP	SW033	25 Oct 2022	Field_D	0.63	0.81	5.61	0.3	***17.5***	0.27	0.7	0.89	2.65	0.38	0.93	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.19	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**23.1**	30.9	-	-
QLD_0861_PFAS	SW034	01 Jun 2017	Normal	0.83	0.87	5.91	0.24	***6.08***	<0.02	<0.1	0.48	1.02	0.1	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**12**	15.7	4.57	1.51
QLD_0861_PFAS	SW034	30 Apr 2019	Normal	<0.02	<0.02	<0.02	<0.02	***0.01***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01	-	-
QLD_0861_PFAS	SW034	19 Nov 2019	Normal	0.04	<0.02	0.11	<0.02	***0.14***	<0.02	<0.1	<0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.25	0.35	-	-
QLD_0861_PFASOMP	SW034	14 Apr 2020	Normal	<0.02	<0.02	0.02	<0.02	***0.06***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.08	-	-
QLD_0861_PFASOMP	SW034	12 Oct 2020	Normal	<0.02	<0.02	<0.02	<0.02	***0.03***	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03	-	-
QLD_0861_PFASOMP	SW034	12 Apr 2021	Normal	<0.02	<0.02	<0.02	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.2	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.22	-	-
QLD_0861_PFASOMP	SW034	19 Oct 2021	Normal	<0.02	<0.02	<0.01	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	-	-
QLD_0861_PFASOMP	SW034	29 Mar 2022	Normal	<0.02	<0.02	0.05	<0.02	***0.08***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.13	-	-
QLD_0861_PFASOMP	SW034	18 Oct 2022	Normal	0.02	0.02	0.2	<0.02	***0.3***	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.5	0.58	-	-
QLD_0861_PFASOMP_23	SW034	28 Apr 2023	Normal	<0.02	<0.02	0.02	<0.02	***0.04***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06	-	-
QLD_0861_PFAS	SW035	13 Sep 2017	Normal	4.82	5.88	48.1	3.22	***25.6***	<0.002	<0.01	2.74	10.4	1.32	1.92	0.03	0.01	0.003	<0.002	<0.002	<0.005	<0.005	0.058	0.014	0.024	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	**73.7**	104	12.5	0.132
QLD_0861_PFAS	SW036	30 May 2017	Normal	0.038	0.024	0.111	0.007	***0.119***	<0.002	<0.01	0.013	0.039	0.008	0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	Perfluorooctane sulfonic acid (PFOS) - Branched
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.002	0.002	0.002
HEPA (2020) Recreational Water Guideline Value												**10**																			**2**			
HEPA (2020) Freshwater 99% Species Protection						*0.00023*						*19*																						
HEPA (2020) Freshwater 95% Species Protection						*0.13*						*220*																						
Project ID	**Location**	**Date**	**Sample Type**																															
QLD_0861_PFASOMP	SW037	15 Apr 2020	Normal	3.03	3.54	12.2	0.41	*8.27*	<0.10	1.6	3.23	9.39	1.4	1.48	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	0.29	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	**20.5**	44.8	-	-
QLD_0861_PFASOMP	SW037	14 Oct 2020	Normal	5.81	4.41	24.4	1.06	*12.2*	<0.10	3.32	3.74	11.7	2.35	4.03	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	0.8	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	**36.6**	73.8	-	-
QLD_0861_PFASOMP	SW037	30 Mar 2021	Normal	0.93	0.83	5.23	0.2	*4.34*	<0.10	<0.5	1.36	2	0.42	0.58	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	**9.57**	15.9	-	-
QLD_0861_PFASOMP	SW037	30 Mar 2021	Interlab_D	0.83	0.66	3.1	0.09	*1.3*	<0.01	0.47	1.1	1.7	0.36	0.42	0.018	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.043	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-	-
QLD_0861_PFASOMP	SW037	30 Mar 2021	Field_D	0.96	0.89	4.96	0.2	*3.56*	<0.10	<0.5	1.32	2.03	0.39	0.56	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	**8.52**	14.9	-	-
QLD_0861_PFASOMP	SW037	26 Oct 2021	Normal	0.6	0.4	2.49	0.13	*2.53*	<0.02	0.28	0.62	1.17	0.18	0.22	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**5.02**	8.65	-	-
QLD_0861_PFASOMP	SW037	30 Mar 2022	Normal	0.28	0.23	1.53	0.08	*1.49*	<0.02	<0.1	0.18	0.38	0.07	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.02**	4.34	-	-
QLD_0861_PFASOMP	SW037	21 Oct 2022	Normal	0.22	0.22	1.55	0.1	*1.82*	<0.02	<0.1	0.14	0.43	0.06	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.37**	4.66	-	-
QLD_0861_PFASOMP_23	SW037	18 Apr 2023	Normal	0.54	0.52	2.57	0.13	*1.73*	<0.02	<0.1	0.24	0.69	0.13	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.3**	6.7	-	-
QLD_0861_PFAS	SW038	17 Oct 2017	Normal	0.008	0.005	0.046	<0.002	*0.037*	<0.002	<0.01	0.01	0.014	0.004	0.006	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	0.013	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.083	0.143	0.025	0.012
QLD_0861_PFAS	SW038	13 May 2019	Normal	<0.02	<0.02	<0.02	<0.02	*0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01	-	-
QLD_0861_PFAS	SW038	29 Nov 2019	Normal	<0.02	<0.02	0.03	<0.02	*0.03*	<0.02	<0.10	<0.02	0.04	0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.12	-	-
QLD_0861_PFASOMP	SW038	14 Apr 2020	Normal	0.05	0.06	0.35	<0.02	*0.62*	<0.02	<0.1	<0.16	0.17	0.04	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.07	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.97	1.39	-	-
QLD_0861_PFASOMP	SW038	03 Nov 2020	Normal	0.03	0.02	0.23	<0.02	*0.59*	<0.02	<0.2	0.19	0.21	0.09	0.05	<0.02	0.05	0.1	0.06	<0.02	<0.05	<0.05	1.32	0.34	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.82	3.28	-	-
QLD_0861_PFASOMP	SW038	30 Mar 2021	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW038	30 Mar 2021	Interlab_D	<0.01	<0.01	0.019	<0.01	<0.02	<0.01	<0.05	<0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-	-
QLD_0861_PFASOMP	SW038	30 Mar 2021	Field_D	<0.02	<0.02	0.03	<0.02	*0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	-	-
QLD_0861_PFASOMP	SW038	25 Oct 2021	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW038	30 Mar 2022	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW038	24 Oct 2022	Normal	<0.02	<0.02	0.04	<0.02	*0.07*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.11	0.11	-	-
QLD_0861_PFAS	SW039	30 May 2017	Normal	<0.002	<0.002	<0.002	<0.002	*0.004*	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.004	0.004	0.002	<0.002
QLD_0861_PFAS	SW039	19 Nov 2019	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFAS	SW039	29 Nov 2019	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW039	15 Apr 2020	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW039	14 Oct 2020	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.45	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW039	30 Mar 2021	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW039	22 Oct 2021	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW039	22 Oct 2021	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-	-
QLD_0861_PFASOMP	SW039	22 Oct 2021	Field_D	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW039	28 Mar 2022	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.1	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	0.1	-	-
QLD_0861_PFASOMP	SW039	28 Mar 2022	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-	-
QLD_0861_PFASOMP	SW039	28 Mar 2022	Field_D	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.29	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	0.32	-	-
QLD_0861_PFASOMP	SW039	20 Oct 2022	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP_23	SW039	26 Apr 2023	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFAS	SW040	02 Jun 2017	Normal	<0.02	<0.02	0.11	<0.02	*0.09*	<0.02	<0.1	<0.02	0.03	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.2	0.24	0.06	0.03
QLD_0861_PFAS	SW040	06 May 2019	Normal	0.04	0.04	0.29	<0.02	*0.3*	<0.02	<0.1	0.04	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.59	0.81	-	-
QLD_0861_PFAS	SW040	20 Nov 2019	Normal	0.04	0.04	0.3	<0.02	*0.34*	<0.02	<0.1	<0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.64	0.82	-	-
QLD_0861_PFASOMP	SW040	15 Apr 2020	Normal	<0.02	<0.02	0.07	<0.02	*0.12*	<0.02	<0.1	<0.04	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.19	0.23	-	-
QLD_0861_PFASOMP	SW040	15 Oct 2020	Normal	0.03	0.03	0.21	<0.02	*0.27*	<0.02	<0.15	0.04	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.48	0.68	-	-
QLD_0861_PFASOMP	SW040	15 Apr 2021	Normal	<0.02	<0.02	0.03	<0.02	*0.06*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09	-	-
QLD_0861_PFASOMP	SW040	19 Oct 2021	Normal	<0.02	<0.02	0.05	<0.02	*0.1*	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.15	0.17	-	-
QLD_0861_PFASOMP	SW040	28 Mar 2022	Normal	0.03	0.03	0.19	<0.02	*0.16*	<0.02	<0.1	<0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.14	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.35	0.61	-	-
QLD_0861_PFASOMP	SW040	20 Oct 2022	Normal	<0.02	<0.02	0.14	<0.02	*0.21*	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.35	0.39	-	-
QLD_0861_PFASOMP_23	SW040	18 Apr 2023	Normal	<0.02	<0.02	0.05	<0.02	*0.1*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.15	0.15	-	-
QLD_0861_PFASOMP	SW040	19 Oct 2021	Normal	<0.02	<0.02	0.05	<0.02	*0.1*	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.15	0.17	-	-
QLD_0861_PFASOMP	SW040	28 Mar 2022	Normal	0.03	0.03	0.19	<0.02	*0.16*	<0.02	<0.1	<0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.14	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.35	0.61	-	-
QLD_0861_PFASOMP	SW040	20 Oct 2022	Normal	<0.02	<0.02	0.14	<0.02	*0.21*	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.35	0.39	-	-
QLD_0861_PFASOMP_23	SW040	18 Apr 2023	Normal	<0.02	<0.02	0.05	<0.02	*0.1*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.15	0.15	-	-
QLD_0861_PFASOMP	SW041	17 Oct 2017	Normal	0.799	0.573	4.54	0.279	*6.2*	0.012	0.13	0.459	1.3	0.221	0.266	0.026	0.009	<0.002	<0.002	<0.002	<0.005	<0.005	0.389	0.042	<0.005	0.012	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	**10.7**	15.2	4.22	1.98
QLD_0861_PFAS	SW041	17 Oct 2017	Field_D	0.768	0.498	4.51	0.315	*7.1*	0.013	0.1	0.434	1.21	0.24	0.304	0.031	0.011	<0.002	<0.002	<0.002	<0.005	<0.005	0.426	0.054	<0.005	0.015	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	**11.6**	16	4.8	2.3
QLD_0861_PFAS	SW041	20 Oct 2017	Interlab_D	0.49	0.44	3.3	0.15	*5.2*	<0.02	0.23	0.42	1	0.15	0.24	0.02	<0.02	<0.02	<0.05	<0.1	<0.5	<0.01	0.31	0.03	<0.01	<0.1	<0.05	<0.02	<0.05	<0.1	<0.02	<0.5	-	-	-	-
QLD_0861_PFAS	SW041	20 Oct 2017	Interlab_D	0.58	0.59	3.6	0.16	*7.4*	0.003	0.25	0.49	1.2	0.18	0.3	0.02	0.01	0.004	<0.005	<0.01	<0.05	<0.005	0.37	0.064	<0.001	<0.01	<0.02	<0.002	<0.005	<0.05	<0.002	<0.05	-	-	-	-
QLD_0861_PFAS	SW041	08 May 2019	Normal	1.73	1.7	12.8	0.58	*9.18*	<0.02	0.3	0.66	2.8	0.39	0.66	0.03	0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.07	0.07	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**22**	31	-	-
QLD_0861_PFAS	SW041	08 May 2019	Field_D	1.76	1.67	12	0.61	*8.46*	<0.02	0.1	0.68	3.03	0.42	0.66	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.07	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**20.5**	29.5	-	-
QLD_0861_PFAS	SW041	19 Nov 2019	Normal	2.66	2.57	18.2	1.01	*11.9*	<0.02	0.6	0.98	4.04	0.65	1.01	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.22	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**30.1**	43.9	-	-
QLD_0861_PFASOMP	SW041	15 Apr 2020	Normal	3.97	5.63	30.4	1.32	*17.8*	<0.10	0.85	1.57	7.76	0.93	1.3	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	0.27	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	**48.2**	71.8	-	-
QLD_0861_PFASOMP	SW041	15 Oct 2020	Normal	3.74	3.35	24.4	1.22	*13.4*	<0.10	0.96	1.4	5.86	0.86	1.26	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	**37.8**	56.4	-	-
QLD_0861_PFASOMP	SW041	30 Mar 2021	Normal	1.23	1.18	8.44	0.5	*8.83*	<0.10	<0.5	0.68	2.26	0.35	0.48	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	**17.3**	24	-	-
QLD_0861_PFASOMP	SW041	26 Oct 2021	Normal	0.3	0.23	1.84	0.13	*2.61*	<0.02	<0.10	0.14	0.52	0.06	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.45**	5.93	-	-
QLD_0861_PFASOMP	SW041	28 Mar 2022	Normal	0.98	1.08	7.45	0.51	*8.46*	<0.02	0.2	0.38	1.49	0.24	0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**15.9**	21.4	-	-
QLD_0861_PFASOMP	SW041	20 Oct 2022	Normal	0.08	0.1	0.78	0.04	*1*	<0.02	<0.1	0.04	0.2	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.78	2.31	-	-
QLD_0861_PFASOMP	SW041	20 Oct 2022	Interlab_D	0.062	0.061	0.52	0.02	*0.67*	<0.01	0.1	0.033	0.11	0.014	0.032	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-	-
QLD_0861_PFASOMP	SW041	20 Oct 2022	Field_D	0.1	0.1	0.79	0.06	*1.11*	<0.02	<0.1	0.05	0.21	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.9	2.49	-	-
QLD_0861_PFASOMP_23	SW041	18 Apr 2023	Normal	0.98	1.18	8.04	0.55	*8.88*	<0.04	0.3	0.4	1.47	0.25	0.45	<0.04	<0.04	<0.04	<0.04	<0.04	<0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	**16.9**	22.5	-	-
QLD_0861_PFAS	SW042	02 Jun 2017	Normal	<0.02	0.03	0.3	<0.02	*0.28*	<0.02	<0.1	<0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.58	0.71	0.17	0.11
QLD_0861_PFAS	SW043	05 Jun 2017	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	0.07	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	0.07	<0.01	<0.01
QLD_0861_PFAS	SW043	19 Nov 2019	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	Perfluorooctane sulfonic acid (PFOS) - Branched
Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
LOR		0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.002	0.002	0.002
HEPA (2020) Recreational Water Guideline Value												**10**																			**2**			
HEPA (2020) Freshwater 99% Species Protection						*0.00023*						*19*																						
HEPA (2020) Freshwater 95% Species Protection						*0.13*						*220*																						
Project ID	**Location**	**Date**	**Sample Type**																															
QLD_0861_PFASOMP	SW047	15 Apr 2020	Normal	0.18	0.15	1.06	0.06	*1.76*	<0.02	0.14	0.3	0.37	0.1	0.14	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.12	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.82**	4.38	-	-
QLD_0861_PFASOMP	SW047	13 Oct 2020	Normal	0.49	0.43	2.53	0.09	*1.9*	0.03	<0.80	1.22	1.56	0.48	0.32	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.43**	9.08	-	-
QLD_0861_PFASOMP	SW047	14 Apr 2021	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW047	20 Oct 2021	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW047	31 Mar 2022	Normal	<0.02	<0.02	<0.01	<0.02	*0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01	-	-
QLD_0861_PFASOMP	SW047	19 Oct 2022	Normal	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP_23	SW047	22 May 2023	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFAS	SW048	18 Sep 2017	Normal	0.11	0.36	2.58	0.28	*14.9*	0.02	0.4	0.47	1.78	0.24	0.55	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	3.17	0.76	<0.05	0.12	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**17.5**	25.8	10.6	4.25
QLD_0861_PFAS	SW048	18 Sep 2017	Field_D	0.11	0.33	2.39	0.27	*13.4*	0.02	0.4	0.45	1.84	0.2	0.54	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	3.03	0.6	<0.05	0.09	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**15.8**	23.7	9.58	3.81
QLD_0861_PFAS	SW048	18 Sep 2017	Field_D	0.11	0.34	2.48	0.28	*14.2*	<0.02	0.4	0.42	1.73	0.22	0.54	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	3.05	0.59	<0.05	0.09	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**16.7**	24.4	9.98	4.19
QLD_0861_PFASOMP	SW048	28 Mar 2022	Normal	0.03	0.02	0.12	<0.02	*0.38*	<0.02	<0.1	0.02	0.14	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.06	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.5	0.79	-	-
QLD_0861_PFASOMP	SW048	21 Oct 2022	Normal	<0.03	0.02	0.16	<0.02	*0.43*	<0.02	<0.1	0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.06	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.59	0.79	-	-
QLD_0861_PFASOMP_23	SW048	27 Apr 2023	Normal	0.1	0.11	0.96	0.08	*2.66*	<0.02	<0.1	0.09	0.29	0.05	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.31	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.62**	4.75	-	-
QLD_0861_PFAS	SW049	14 Sep 2017	Normal	0.21	0.15	1.09	0.06	*2.33*	<0.02	0.1	0.18	0.42	0.06	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.42**	4.75	1.64	0.69
QLD_0861_PFAS	SW049	10 May 2019	Normal	1.16	0.94	6.06	0.3	*5.22*	<0.02	1	1.04	2.49	0.4	0.87	0.06	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**11.3**	19.5	-	-
QLD_0861_PFASOMP	SW049	20 Apr 2020	Normal	0.31	0.22	1.29	0.08	*2.28*	<0.02	<0.3	<0.28	0.69	0.11	0.22	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.57**	5.2	-	-
QLD_0861_PFASOMP	SW049	20 Apr 2020	Interlab_D	0.3	0.2	0.89	0.047	*1.3*	<0.01	0.35	0.28	0.59	0.09	0.19	0.014	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-	-
QLD_0861_PFASOMP	SW049	20 Apr 2020	Field_D	0.44	0.2	1.41	0.08	*2.52*	<0.02	0.3	0.38	0.73	0.11	0.23	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.93**	6.4	-	-
QLD_0861_PFASOMP	SW049	13 Oct 2020	Normal	0.7	0.46	2.8	0.14	*4.3*	<0.05	0.3	0.57	1.44	0.24	0.48	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	**7.1**	11.4	-	-
QLD_0861_PFASOMP	SW049	13 Apr 2021	Normal	0.34	0.35	1.89	0.09	*2.73*	<0.02	0.3	0.37	0.73	0.15	0.3	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.62**	7.25	-	-
QLD_0861_PFASOMP	SW049	20 Oct 2021	Normal	0.35	0.23	2.07	0.11	*2.4*	<0.02	0.4	0.32	0.9	0.13	0.3	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.47**	7.21	-	-
QLD_0861_PFASOMP	SW049	31 Mar 2022	Normal	0.03	0.02	0.17	<0.02	*0.64*	<0.02	<0.1	0.02	0.06	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.81	0.97	-	-
QLD_0861_PFASOMP	SW049	19 Oct 2022	Normal	0.03	<0.02	0.19	<0.02	*0.47*	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	0.66	0.75	-	-
QLD_0861_PFASOMP	SW049	19 Oct 2022	Field_D	0.03	<0.02	0.17	<0.02	*0.46*	<0.02	<0.1	<0.02	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	0.63	0.73	-	-
QLD_0861_PFASOMP	SW049	19 Oct 2022	Field_D	0.03	<0.02	0.17	<0.02	*0.44*	<0.02	<0.1	<0.02	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	0.61	0.72	-	-
QLD_0861_PFASOMP_23	SW049	26 Apr 2023	Normal	0.09	0.07	0.44	0.03	*1.06*	<0.02	<0.1	0.07	0.19	0.03	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.5	2.05	-	-
QLD_0861_PFAS	SW050	30 May 2017	Normal	0.044	0.027	0.127	0.006	*0.103*	<0.002	<0.01	0.012	0.026	0.006	0.009	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.23	0.36	0.05	0.05
QLD_0861_PFAS	SW050	01 May 2019	Normal	0.02	0.02	0.16	<0.03	*0.13*	<0.02	<0.1	0.06	0.07	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.29	0.46	-	-
QLD_0861_PFAS	SW050	19 Nov 2019	Normal	0.06	0.05	0.38	<0.02	*0.72*	<0.02	<0.1	0.1	0.21	0.07	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.1	1.63	-	-
QLD_0861_PFASOMP	SW050	15 Apr 2020	Normal	0.06	0.06	0.41	<0.02	*0.62*	<0.02	<0.1	<0.20	0.22	0.05	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.08	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.03	1.54	-	-
QLD_0861_PFASOMP	SW050	14 Oct 2020	Normal	<0.05	<0.05	0.12	<0.05	*0.28*	<0.05	<0.25	0.14	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	0.06	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	0.4	0.68	-	-
QLD_0861_PFASOMP	SW050	14 Apr 2021	Normal	<0.02	<0.02	<0.02	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	-	-
QLD_0861_PFASOMP	SW050	19 Oct 2021	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW050	01 Apr 2022	Normal	<0.02	<0.02	<0.01	<0.02	*0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.01	0.01	-	-
QLD_0861_PFASOMP_23	SW050	11 May 2023	Normal	<0.02	<0.02	0.11	<0.02	*0.11*	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.22	0.26	-	-
QLD_0861_PFAS	SW051	02 Jun 2017	Normal	<0.02	0.05	0.33	<0.02	*0.33*	<0.02	<0.1	<0.02	0.09	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.66	0.85	0.18	0.14
QLD_0861_PFAS	SW051	01 May 2019	Normal	0.07	0.07	0.51	<0.02	*0.49*	<0.02	<0.1	0.19	0.25	0.05	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.16	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1	1.84	-	-
QLD_0861_PFAS	SW051	19 Nov 2019	Normal	0.06	0.05	0.38	<0.02	*0.69*	<0.02	<0.1	0.09	0.2	0.07	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.07	1.58	-	-
QLD_0861_PFAS	SW051	20 Nov 2019	Normal	0.03	<0.02	0.08	<0.02	*0.07*	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.15	0.2	-	-
QLD_0861_PFASOMP	SW051	15 Apr 2020	Normal	<0.02	<0.02	0.23	<0.02	*0.28*	<0.02	<0.10	0.03	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.51	0.62	-	-
QLD_0861_PFASOMP	SW051	14 Oct 2020	Normal	0.02	<0.02	0.16	<0.02	*0.29*	<0.02	<0.10	0.14	0.13	0.04	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.06	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.45	0.86	-	-
QLD_0861_PFASOMP	SW051	13 Apr 2021	Normal	<0.02	<0.02	<0.02	<0.02	*0.04*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	-	-
QLD_0861_PFASOMP	SW051	19 Oct 2021	Normal	<0.02	<0.02	0.06	<0.02	*0.08*	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.14	0.17	-	-
QLD_0861_PFASOMP	SW051	01 Apr 2022	Normal	<0.02	<0.02	<0.01	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	-	-
QLD_0861_PFASOMP	SW051	14 Oct 2022	Normal	<0.02	<0.02	<0.01	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	-	-
QLD_0861_PFASOMP	SW051	13 Apr 2023	Normal	<0.02	<0.02	0.04	<0.02	*0.04*	<0.02	<0.1	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	-	-
QLD_0861_PFASOMP	SW051	26 Apr 2023	Normal	<0.02	<0.02	0.01	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03	-	-
QLD_0861_PFAS	SW053	17 Oct 2017	Normal	0.201	0.171	2.15	0.09	*3.14*	<0.002	0.01	0.046	0.358	0.036	0.056	0.003	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	0.012	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	**5.29**	6.27	1.9	1.24
QLD_0861_PFAS	SW053	03 Dec 2019	Normal	0.03	0.04	0.4	<0.02	*0.42*	<0.02	<0.1	0.03	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.82	1.02	-	-
QLD_0861_PFASOMP	SW053	21 Apr 2020	Normal	<0.02	<0.02	0.03	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	-	-
QLD_0861_PFASOMP	SW053	21 Oct 2020	Normal	<0.02	<0.02	0.06	<0.02	*0.15*	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.21	0.25	-	-
QLD_0861_PFASOMP	SW053	19 Apr 2021	Normal	<0.02	<0.02	0.04	<0.02	*0.1*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.14	0.14	-	-
QLD_0861_PFASOMP	SW053	25 Oct 2021	Normal	0.06	0.06	0.52	<0.02	*0.49*	<0.02	<0.1	0.02	0.11	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.01	1.27	-	-
QLD_0861_PFASOMP	SW053	06 Apr 2022	Normal	<0.02	<0.02	0.11	<0.02	*0.11*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.22	0.22	-	-
QLD_0861_PFASOMP	SW053	24 Oct 2022	Normal	<0.02	0.02	0.18	<0.02	*0.17*	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.35	0.41	-	-
QLD_0861_PFASOMP_23	SW053	21 Apr 2023	Normal	<0.02	<0.02	0.03	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	-	-
QLD_0861_PFAS	SW054	17 Oct 2017	Normal	0.258	0.181	1.42	0.048	*1.88*	<0.002	0.02	0.21	0.542	0.097	0.113	0.009	0.006	<0.002	<0.002	<0.002	<0.005	<0.005	0.146	<0.005	<0.005	0.062	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	**3.3**	4.99	1.18	0.7
QLD_0861_PFAS	SW056	14 Sep 2017	Normal	0.23	0.2	1.82	0.1	*3.95*	<0.02	<0.1	0.08	0.46	0.05	0.14	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**5.77**	7.03	2.64	1.31
QLD_0861_PFAS	SW056	01 May 2019	Normal	0.11	0.1	0.81	0.02	*1.11*	<0.02	<0.1	0.19	0.32	0.08	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.08	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.92	2.91	-	-
QLD_0861_PFAS	SW056	18 Nov 2019	Interlab_D	0.19	0.16	1.4	0.06	*2.8*	<0.02	0.1	0.2	0.34	0.06	0.08	<0.01	<0.02	<0.02	<0.05	<0.1	<0.5	<0.01	0.01	<0.01	<0.01	<0.1	<0.05	<0.02	<0.05	<0.1	<0.02	<0.5	**4.2**	5.4	-	-
QLD_0861_PFAS	SW056	18 Nov 2019	Field_D	0.19	0.15	1.28	0.06	*2.66*	<0.02	0.1	0.06	0.37	0.05	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.94**	5.01	-	-
QLD_0861_PFAS	SW056	19 Nov 2019	Normal	0.2	0.15	1.3	0.06	*2.92*	<0.02	0.1	0.06	0.38	0.05	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.22**	5.31	-	-
QLD_0861_PFAS	SW056	21 Nov 2019	Field_D	0.21	0.15	1.31	0.06	*2.68*	<0.02	<0.1	0.06	0.37	0.06	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.99**	4.99	-	-
QLD_0861_PFASOMP	SW056	15 Apr 2020	Normal	0.35	0.32	2.8	0.08	*1.52*	<0.02	0.3	0.58	0.96	0.24	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.13	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.32**	7.48	-	-
QLD_0861_PFASOMP	SW056	15 Apr 2020	Interlab_D	0.32	0.27	2.3	0.063	*1.6*	<0.01	0.24	0.54	0.76	0.16	0.16	0.013	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.14	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-	-
QLD_0861_PFASOMP	SW056	15 Apr 2020	Field_D	0.4	0.28	2.27	0.11	*2.32*	<0.02	0.3	0.63	0.79	0.22	0.23	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.18	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.59**	7.73	-	-
QLD_0861_PFASOMP	SW056	19 Oct 2020	Normal	0.15	0.13	1.13	0.05	*2.72*	<0.02	0.1	0.13	0.32	0.05	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.85**	4.9	-	-
QLD_0861_PFASOMP	SW056	19 Oct 2020	Interlab_D	0.14	0.11	1.1	0.039	*2.4*	<0.01	0.087	0.12	0.28	0.046	0.082	<0.01	<0.01	<0.

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	Perfluorooctane sulfonic acid (PFOS) - Branched
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.002	0.002	0.002
HEPA (2020) Recreational Water Guideline Value												**10**																		**2**			
HEPA (2020) Freshwater 99% Species Protection						*0.00023*						*19*																					
HEPA (2020) Freshwater 95% Species Protection						*0.13*						*220*																					
Project ID	**Location**	**Date**	**Sample Type**																															
QLD_0861_PFASOMP	SW059	26 Oct 2021	Normal	1.05	0.72	4.03	0.25	*6.05*	<0.02	0.79	1.7	2.27	0.43	0.59	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.11	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**10.1**	18	-	-
QLD_0861_PFASOMP	SW059	28 Mar 2022	Normal	0.13	0.11	0.66	0.03	*0.92*	<0.02	<0.1	0.15	0.23	0.06	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.58	2.36	-	-
QLD_0861_PFASOMP	SW059	21 Oct 2022	Normal	0.52	0.52	3.27	0.2	*5.41*	<0.02	0.2	0.58	1.41	0.24	0.55	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.11	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**8.68**	13	-	-
QLD_0861_PFASOMP_23	SW059	17 Apr 2023	Normal	0.44	0.38	2.28	0.1	*2.66*	<0.02	0.3	0.68	0.89	0.16	0.23	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.94**	8.12	-	-
QLD_0861_PFASOMP_23	SW059	17 Apr 2023	Interlab_D	0.35	0.28	1.8	0.052	*2*	<0.01	0.27	0.45	0.67	0.15	0.15	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-	-
QLD_0861_PFASOMP_23	SW059	17 Apr 2023	Field_D	0.39	0.39	2.19	0.1	*2.59*	<0.02	0.3	0.62	0.86	0.18	0.22	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.78**	7.84	-	-
QLD_0861_PFAS	SW064	19 Oct 2017	Normal	0.634	0.349	1.84	0.04	*1.43*	<0.002	0.03	0.167	0.385	0.05	0.048	0.006	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	**3.27**	4.98	1.09	0.34
QLD_0861_PFASOMP	SW064	19 Apr 2021	Normal	0.32	0.19	0.84	0.03	*0.87*	<0.02	0.2	0.14	0.27	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.71	2.92	-	-
QLD_0861_PFASOMP	SW064	25 Oct 2021	Normal	0.29	0.13	0.79	0.03	*0.71*	<0.02	0.11	0.1	0.26	0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.5	2.48	-	-
QLD_0861_PFASOMP	SW064	06 Apr 2022	Normal	0.2	0.14	0.74	<0.02	*0.87*	<0.02	<0.1	<0.10	0.19	0.03	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	1.61	2.21	-	-
QLD_0861_PFASOMP	SW064	06 Apr 2022	Interlab_D	0.14	0.097	0.55	0.013	*0.6*	<0.01	0.069	0.054	0.12	0.015	0.024	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.02	<0.01	<0.01	<0.05	-	-	-	-
QLD_0861_PFASOMP	SW064	06 Apr 2022	Field_D	0.24	0.15	0.72	0.03	*0.75*	<0.02	<0.1	0.08	0.18	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.47	2.19	-	-
QLD_0861_PFASOMP	SW064	24 Oct 2022	Normal	0.04	0.02	0.24	<0.02	*0.49*	<0.02	<0.1	<0.02	0.06	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.73	0.85	-	-
QLD_0861_PFASOMP_23	SW064	21 Apr 2023	Normal	0.18	0.12	0.62	0.02	*0.65*	<0.02	<0.1	<0.04	0.11	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.27	1.72	-	-
QLD_0861_PFAS	SW065	05 Jun 2017	Normal	<0.02	<0.02	0.03	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	0.01	<0.01
QLD_0861_PFAS	SW066	09 Mar 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	SW067	17 Oct 2017	Normal	0.108	0.098	1.1	0.051	*1.42*	<0.002	<0.01	0.111	0.366	0.152	0.127	0.043	0.043	0.018	0.018	0.005	<0.005	<0.005	0.026	0.029	<0.005	0.003	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	**2.52**	3.72	0.905	0.515
QLD_0861_PFAS	SW067	03 Dec 2019	Normal	4.03	3.63	24.2	0.96	*26.6*	<0.25	<1.2	1.73	5.93	0.44	0.44	<0.25	<0.25	<0.25	<1.26	<0.25	<0.62	<0.25	<0.25	<0.25	<0.25	<0.25	<0.62	<0.25	<0.62	<0.62	<0.25	<0.62	**50.8**	68	-	-
QLD_0861_PFASOMP	SW067	21 Apr 2020	Normal	3.61	2.74	15.3	0.61	*14.3*	<0.03	0.6	1.72	3.45	0.3	0.48	0.04	<0.03	<0.03	<0.03	<0.03	<0.08	<0.05	<0.05	<0.05	<0.05	<0.03	<0.08	<0.03	<0.08	<0.08	<0.03	<0.08	**29.6**	43.2	-	-
QLD_0861_PFASOMP	SW067	21 Oct 2020	Normal	6.52	5.75	38.4	0.85	*20.6*	<0.05	2.2	2.93	10.2	0.57	0.79	0.06	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	**59**	88.9	-	-
QLD_0861_PFASOMP	SW067	19 Apr 2021	Normal	2.63	2.46	15.6	0.88	*17.3*	0.07	1.6	1.93	3.35	0.36	0.54	0.06	0.03	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**32.9**	46.8	-	-
QLD_0861_PFASOMP	SW067	25 Oct 2021	Normal	1.7	1.48	10.1	0.31	*9.39*	<0.05	3	3.78	4.67	0.48	0.55	0.14	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	**19.5**	35.6	-	-
QLD_0861_PFASOMP	SW067	24 Oct 2022	Normal	0.52	0.47	3.48	0.13	*4.24*	<0.02	0.5	0.55	0.94	0.13	0.2	0.09	<0.02	<0.02	<0.02	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	**7.72**	11.2	-	-
QLD_0861_PFASOMP_23	SW067	21 Apr 2023	Normal	6.04	5.02	27.6	0.82	*12.5*	<0.05	3.6	4.03	6.23	0.51	0.56	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	**40.1**	66.9	-	-
QLD_0861_PFAS	SW069	20 Feb 2018	Normal	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002
QLD_0861_PFAS	SW070	20 Feb 2018	Normal	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002
QLD_0861_PFAS	SW070	28 Nov 2019	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFAS	SW075	13 Sep 2017	Normal	0.003	0.015	0.067	0.003	*0.494*	<0.002	<0.01	<0.002	0.023	<0.002	0.006	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.561	0.611	0.409	0.085
QLD_0861_PFAS	SW076	13 Sep 2017	Normal	1.92	1.97	8.58	0.178	*25.9*	<0.002	0.24	1.61	4.68	0.902	1.29	0.057	0.009	<0.002	<0.002	<0.002	<0.005	<0.005	0.038	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	**34.5**	47.4	14.1	11.8
QLD_0861_PFAS	SW076	01 May 2019	Normal	0.37	0.38	2.66	0.11	*2.79*	<0.02	0.2	0.75	1.07	0.27	0.37	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.35	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**5.45**	9.35	-	-
QLD_0861_PFASOMP	SW076	15 Apr 2020	Normal	0.48	0.42	2.17	0.09	*2.27*	<0.02	<0.5	<1.12	1.2	0.36	0.29	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.21	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.44**	7.51	-	-
QLD_0861_PFASOMP	SW076	10 Nov 2020	Normal	0.26	0.21	1.4	0.09	*3.68*	0.03	0.2	0.37	0.56	0.19	0.25	0.04	0.04	<0.02	<0.02	<0.02	<0.05	<0.05	0.28	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**5.08**	7.6	-	-
QLD_0861_PFASOMP	SW076	30 Mar 2021	Normal	0.49	0.45	2.74	0.1	*1.98*	<0.10	0.6	1.8	1.6	0.38	0.32	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	2.26	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	**4.72**	12.7	-	-
QLD_0861_PFASOMP	SW076	26 Oct 2021	Normal	0.41	0.3	1.83	0.1	*2.07*	<0.02	0.26	0.61	0.95	0.18	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.18	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.9**	7.09	-	-
QLD_0861_PFASOMP	SW076	28 Mar 2022	Normal	0.83	0.75	3.72	0.19	*3.64*	<0.02	0.3	0.96	1.78	0.41	0.6	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.28	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**7.36**	13.5	-	-
QLD_0861_PFASOMP_23	SW076	18 Apr 2023	Normal	0.39	0.34	1.83	0.1	*1.93*	<0.02	0.2	0.46	0.78	0.18	0.24	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.2	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.76**	6.65	-	-
QLD_0861_PFASOMP_23	SW076	18 Apr 2023	Interlab_D	0.3	0.27	1.8	0.059	*1.5*	<0.01	0.21	0.41	0.64	0.15	0.18	0.011	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.16	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.05	-	-	-	-
QLD_0861_PFASOMP_23	SW076	18 Apr 2023	Field_D	0.45	0.34	1.76	0.09	*1.98*	<0.02	0.2	0.5	0.81	0.17	0.26	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.17	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**3.74**	6.73	-	-
QLD_0861_PFAS	SW079	17 Oct 2017	Normal	0.916	0.676	5.96	0.423	*8.62*	0.03	0.05	0.544	1.58	0.288	0.384	0.034	0.013	0.002	<0.002	<0.002	<0.005	<0.005	0.514	0.078	<0.005	0.028	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	**14.6**	20.1	6.1	2.52
QLD_0861_PFASOMP	SW079	21 Apr 2020	Normal	4.38	5.26	34.3	1.58	*15.9*	<0.06	0.4	1.2	6.63	0.97	1.54	<0.06	<0.06	<0.06	<0.06	<0.06	<0.16	<0.06	<0.06	<0.06	<0.06	<0.06	<0.16	<0.06	<0.16	<0.16	<0.06	<0.16	**50.2**	72.2	-	-
QLD_0861_PFASOMP	SW079	21 Oct 2020	Normal	3.93	3.66	28.5	1.29	*18.2*	0.08	0.6	1.13	6.03	0.87	1.42	<0.04	<0.04	<0.04	<0.04	<0.04	<0.11	<0.05	0.06	<0.05	<0.05	<0.04	<0.11	<0.04	<0.11	<0.11	<0.04	<0.11	**46.7**	65.8	-	-
QLD_0861_PFASOMP	SW079	19 Apr 2021	Normal	1.9	3.26	13.7	1.02	*12.8*	0.1	0.4	1.06	3.59	0.6	0.89	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**26.5**	39.3	-	-
QLD_0861_PFASOMP	SW079	19 Apr 2021	Interlab_D	1.7	1.5	10	0.49	*6.3*	<0.01	0.42	0.73	2.2	0.41	0.6	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	0.04	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-	-
QLD_0861_PFASOMP	SW079	19 Apr 2021	Field_D	1.81	2.68	13.2	0.76	*10.1*	<0.02	0.4	0.93	3.24	0.54	0.85	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**23.3**	34.5	-	-
QLD_0861_PFASOMP	SW079	25 Oct 2021	Normal	0.06	0.05	0.32	<0.02	*0.41*	<0.02	<0.1	0.04	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.73	1.03	-	-
QLD_0861_PFASOMP	SW079	06 Apr 2022	Normal	1.23	1.33	8.57	0.46	*7.01*	<0.02	<0.3	0.55	1.94	0.31	0.51	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.05	0.08	<0.05	<0.05	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	**15.6**	22	-	-
QLD_0861_PFASOMP	SW079	24 Oct 2022	Normal	0.08	0.08	0.74	0.03	*1.02*	<0.02	<0.1	0.05	0.16	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	1.76	2.19	-	-
QLD_0861_PFASOMP_23	SW079	21 Apr 2023	Normal	1.09	1.15	8.47	0.48	*8.34*	<0.02	0.2	0.51	1.7	0.27	0.43	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.05	<0.05	<0.05	<0.05	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	**16.8**	22.6	-	-
QLD_0861_PFAS	SW080	17 Oct 2017	Normal	0.63	0.535	4.18	0.188	*4.28*	0.007	0.1	0.241	0.98	0.124	0.148	0.01	0.004	<0.002	<0.002	<0.002	<0.005	<0.005	0.045	0.008	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	**8.46**	11.5	2.72	1.56
QLD_0861_PFAS	SW080	13 May 2019	Normal	3.03	3.21	22.4	1.38	*18.4*	<0.02	0.6	0.99	5.02	0.67	1.16	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**40.8**	56.9	-	-
QLD_0861_PFAS	SW080	03 Dec 2019	Normal	0.72	0.74	5.79	0.37	*8.43*	<0.25	<1.2	<0.25	0.97	<0.25	<0.25	<0.25	<0.25	<0.25	<1.00	<0.25	<0.62	<0.25	<0.25	<0.25	<0.25	<0.25	<0.62	<0.25	<0.62	<0.62	<0.25	<0.62	**14.2**	17	-	-
QLD_0861_PFAS	SW080	03 Dec 2019	Interlab_D	1.1	0.97	7.9	0.49	*9*	<0.02	0.22	0.41	1.6	0.26	0.42	<0.01	<0.02	<0.02	<0.05	<0.1	<0.5	<0.01	0.11	<0.01	<0.01	<0.1	<0.05	<0.02	<0.05	<0.1	<0.02	<0.5	**17**	22	-	-
QLD_0861_PFAS	SW080	03 Dec 2019	Field_D	0.9	1.01	6.71	0.46	*8.82*	<0.02	0.2	0.33	1.63	0.21	0.38	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.09	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**15.5**	20.7	-	-
QLD_0861_PFASOMP	SW080	21 Apr 2020	Normal	3.99	4.78	31.7	1.7	*19.8*	<0.06	0.3	1.03	5.77	0.83	1.38	<0.06	<0.06	<0.06	<0.06	<0.06	<0.16	<0.06	<0.06	<0.06	<0.06	<0.06	<0.16	<0.06	<0.16	<0.16	<0.06	<0.16	**51.5**	71.3	-	-
QLD_0861_PFASOMP	SW080	21 Oct 2020	Normal	2.84	2.84	21.2	1.03	*13.6*	<0.04	0.5	0.81	4.47	0.62	1.07	<0.04	<0.04	<0.04	<0.04	<0.04	<0.10	<0.05	<0.05	<0.05	<0.05	<0.04	<0.10	<0.04	<0.10	<0.10	<0.04	<0.10	**34.8**	49	-	-
QLD_0861_PFASOMP	SW080	19 Apr 2021	Normal	3.46	3.62	26	1.6	*29.9*	<0.05	0.8	1.44	6.2	0.88	1.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	**55.9**	75.4	-	-
QLD_0861_PFASOMP	SW080	25 Oct 2021	Normal	0.19	0.17	1.85	0.11	*3.12*	<0.02	<0.10	0.11	0.41	0.05	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.97**	6.1	-	-
QLD_0861_PFASOMP	SW080	06 Apr 2022	Normal	2.54	3.15	19.8	1.21	*16.8*	<0.02	0.5	1.06	4.14	0.63	1.19	0.03	<0.02	<0.02	<0.02	<0.02	<0.06	<0.05	0.14	<0.05	<0.05	<0.02	<0.06	<0.02	<0.06	<0.06	<0.02	<0.06	**36.6**	51.2	-	-
QLD_0861_PFASOMP	SW080	24 Oct 2022	Normal	<0.10	<0.10	0.76	<0.10	*1.22*	<0.10	<0.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.10	<0.10	<0.10	<0.10	<0.25	<0.10	<0.25	<0.25	<0.10	<0.25	1.98	1.98	-	-
QLD_0861_PFASOMP_23	SW080	21 Apr 2023	Normal	2.62	2.98	22	1.32	*23.9*	<0.05	0.5	1.16	4.24	0.69	1.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	**45.9**	60.6	-	-
QLD_0861_PFAS	SW082	01 Jun 2017	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	SW083	30 May 2017	Normal	<0.002	<0.002	<0.002	<0.002	*0.003*	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.003	0.003	<0.002	<0.002
QLD_0861_PFAS	SW083	30 May 2017	Interlab_D	<0.001	<0.001	<0.001	<0.001	*0.002*	<0.002	0.005	<0.002	0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.005	<0.002	<0.005	<0.01	<0.002	<0.05	-	-	-	-
QLD_0861_PFAS	SW083	30 May 2017	Field_D	<0.002	<0.002	0.002	<0.002	*0.003*	<0.002	<0.01	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.005	0.008	<0.002	<0.002
QLD_0861_PFAS	SW084	02 Jun 2017	Normal	<0.02	<0.02	0.12	<0.02	*0.12*	<0.02	<0.1	<0.02	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.24	0.29	0.07	0.05
QLD_0861_PFAS	SW085	02 Jun 2017	Normal	<0.02	<0.02	0.14	<0.02	*0.15*	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.29	0.34	0.09	0.06
QLD_0861_PFAS	SW086	02 Jun 2017	Normal	<0.02	<0.02	0.11	<0.02	*0.17*	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.28	0.3	0.1	0.07
QLD_0861_PFAS	SW088	15 Sep 2017	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	Perfluorooctane sulfonic acid (PFOS) - Branched
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.002	0.002	0.002
HEPA (2020) Recreational Water Guideline Value												**10**																		**2**			
HEPA (2020) Freshwater 99% Species Protection						*0.00023*						*19*																					
HEPA (2020) Freshwater 95% Species Protection						*0.13*						*220*																					
Project ID	**Location**	**Date**	**Sample Type**																															
QLD_0861_PFASOMP	SW090	13 Oct 2020	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.20	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW090	14 Apr 2021	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW090	21 Oct 2021	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW090	31 Mar 2022	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW090	21 Oct 2022	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP_23	SW090	22 May 2023	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP_23	SW090	22 May 2023	Field_D	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFAS	SW091	14 Sep 2017	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFASOMP	SW091	20 Apr 2020	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW091	14 Apr 2021	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW091	21 Oct 2021	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW091	31 Mar 2022	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP	SW091	21 Oct 2022	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP_23	SW091	22 May 2023	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFAS	SW093	15 Sep 2017	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	SW094	15 Sep 2017	Normal	0.1	0.1	0.56	<0.02	*0.39*	<0.02	<0.1	<0.02	0.24	0.05	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.95	1.51	0.19	0.2
QLD_0861_PFASOMP	SW094	15 Apr 2020	Normal	0.11	0.1	0.9	0.03	*0.98*	<0.02	0.12	0.18	0.31	0.08	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.09	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.88	2.99	-	-
QLD_0861_PFASOMP	SW094	14 Oct 2020	Normal	<0.02	<0.02	0.06	<0.02	*0.1*	<0.02	<0.10	0.03	0.03	0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.16	0.25	-	-
QLD_0861_PFASOMP	SW094	14 Apr 2021	Normal	0.11	0.12	0.65	0.03	*0.82*	<0.02	0.2	0.36	0.3	0.11	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.47	2.8	-	-
QLD_0861_PFASOMP	SW094	22 Oct 2021	Normal	0.02	<0.02	0.12	<0.02	*0.21*	<0.02	<0.1	0.03	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.33	0.44	-	-
QLD_0861_PFASOMP	SW094	01 Apr 2022	Normal	0.19	0.18	1.03	0.05	*1.24*	<0.02	<0.1	0.23	0.4	0.1	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.27**	3.54	-	-
QLD_0861_PFASOMP	SW094	19 Oct 2022	Normal	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFASOMP_23	SW094	22 May 2023	Normal	<0.02	<0.02	0.08	<0.02	*0.13*	<0.02	<0.1	0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.21	0.26	-	-
QLD_0861_PFAS	SW096	18 Sep 2017	Normal	<0.02	<0.02	<0.02	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	0.02	<0.01
QLD_0861_PFAS	SW098	15 Sep 2017	Normal	<0.02	<0.02	<0.02	<0.02	*0.03*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03	0.02	<0.01
QLD_0861_PFAS	SW098	06 May 2019	Normal	<0.02	0.03	0.27	<0.02	*0.32*	<0.02	<0.1	0.14	0.14	0.04	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.15	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.59	1.12	-	-
QLD_0861_PFAS	SW098	20 Nov 2019	Normal	0.04	0.03	0.29	<0.02	*0.45*	<0.02	<0.1	0.11	0.18	0.07	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.74	1.2	-	-
QLD_0861_PFASOMP	SW098	15 Apr 2020	Normal	<0.02	<0.02	0.02	<0.02	*0.07*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09	-	-
QLD_0861_PFASOMP	SW098	15 Oct 2020	Normal	0.04	0.04	0.3	<0.02	*0.42*	<0.02	0.12	0.15	0.16	0.05	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.72	1.32	-	-
QLD_0861_PFASOMP	SW098	15 Apr 2021	Normal	<0.02	<0.02	<0.02	<0.02	*0.04*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	-	-
QLD_0861_PFASOMP	SW098	19 Oct 2021	Normal	<0.02	<0.02	0.06	<0.02	*0.1*	<0.02	<0.1	0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.16	0.21	-	-
QLD_0861_PFASOMP	SW098	01 Apr 2022	Normal	<0.02	<0.02	<0.01	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	-	-
QLD_0861_PFASOMP	SW098	20 Oct 2022	Normal	0.03	0.02	0.18	<0.02	*0.25*	<0.02	<0.1	0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.43	0.59	-	-
QLD_0861_PFASOMP_23	SW098	18 Apr 2023	Normal	<0.02	<0.02	0.05	<0.02	*0.12*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.17	0.17	-	-
QLD_0861_PFASOMP_23	SW098	18 Apr 2023	Interlab_D	<0.01	<0.01	0.033	<0.01	*0.077*	<0.01	<0.05	<0.02	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-	-
QLD_0861_PFASOMP_23	SW098	18 Apr 2023	Field_D	<0.02	<0.02	0.04	<0.02	*0.11*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.15	0.15	-	-
QLD_0861_PFAS	SW099	15 Sep 2017	Normal	<0.02	<0.02	0.05	<0.02	*0.04*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09	0.03	0.02
QLD_0861_PFAS	SW099	07 May 2019	Normal	<0.02	<0.02	0.03	<0.02	<0.01	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.05	-	-
QLD_0861_PFAS	SW099	27 Nov 2019	Normal	<0.02	<0.02	0.02	<0.02	*0.08*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.1	-	-
QLD_0861_PFASOMP	SW099	21 Apr 2020	Normal	<0.02	<0.02	0.03	<0.02	*0.06*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09	-	-
QLD_0861_PFASOMP	SW099	15 Oct 2020	Normal	<0.02	<0.02	<0.02	<0.02	*0.04*	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	-	-
QLD_0861_PFASOMP	SW099	13 Apr 2021	Normal	<0.02	<0.02	0.02	<0.02	*0.06*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.08	-	-
QLD_0861_PFASOMP	SW099	20 Oct 2021	Normal	<0.02	<0.02	0.01	<0.02	*0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	-	-
QLD_0861_PFASOMP	SW099	29 Mar 2022	Normal	<0.02	<0.02	0.02	<0.02	*0.05*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	0.07	-	-
QLD_0861_PFASOMP	SW099	04 Oct 2022	Normal	<0.02	<0.02	<0.02	<0.02	*0.04*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	-	-
QLD_0861_PFASOMP	SW099	19 Apr 2023	Normal	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.01	-	-
QLD_0861_PFAS	SW100	18 Sep 2017	Normal	<0.02	<0.02	0.07	<0.02	*0.07*	<0.02	<0.1	0.09	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.14	0.28	0.05	0.02
QLD_0861_PFAS	SW100	07 May 2019	Normal	<0.02	<0.02	0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.02	0.02	-	-
QLD_0861_PFAS	SW100	07 May 2019	Interlab_D	<0.01	<0.01	0.02	<0.01	*0.06*	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.05	<0.1	<0.5	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.02	<0.05	<0.1	<0.02	<0.5	0.08	0.08	-	-
QLD_0861_PFAS	SW100	07 May 2019	Field_D	<0.02	<0.02	<0.02	<0.02	*0.03*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03	-	-
QLD_0861_PFAS	SW100	27 Nov 2019	Normal	<0.02	<0.02	<0.02	<0.02	*0.06*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06	-	-
QLD_0861_PFAS	SW100	27 Nov 2019	Interlab_D	<0.01	<0.01	0.02	<0.01	*0.07*	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.05	<0.1	<0.5	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.02	<0.05	<0.1	<0.02	<0.5	0.09	0.09	-	-
QLD_0861_PFAS	SW100	27 Nov 2019	Field_D	<0.02	<0.02	<0.02	<0.02	*0.06*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06	-	-
QLD_0861_PFASOMP	SW100	21 Apr 2020	Normal	<0.02	<0.02	0.02	<0.02	*0.05*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	0.07	-	-
QLD_0861_PFASOMP	SW100	16 Oct 2020	Normal	<0.02	<0.02	<0.02	<0.02	*0.03*	<0.02	<0.10	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03	-	-
QLD_0861_PFASOMP	SW100	13 Apr 2021	Normal	<0.02	<0.02	0.02	<0.02	*0.04*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06	-	-
QLD_0861_PFASOMP	SW100	20 Oct 2021	Normal	<0.02	<0.02	0.02	<0.02	*0.03*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	-	-
QLD_0861_PFASOMP	SW100	29 Mar 2022	Normal	<0.02	<0.02	0.02	<0.02	*0.06*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.08	-	-
QLD_0861_PFASOMP	SW100	20 Oct 2022	Normal	<0.02	<0.02	0.03	<0.02	*0.06*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09	-	-
QLD_0861_PFASOMP_23	SW100	19 Apr 2023	Normal	0.04	<0.02	0.14	<0.02	*0.14*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.28	0.32	-	-
QLD_0861_PFAS	SW101	18 Sep 2017	Normal	<0.02	<0.02	0.05	<0.02	*0.08*	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.13	0.18	0.06	0.02
QLD_0861_PFAS	SW103	07 Mar 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	SW105	07 Mar 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	SW105	07 Mar 2018	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.05	<0.1	<0.5	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.02	<0.05	<0.1	<0.02	<0.5	-	-	-	-
QLD_0861_PFAS	SW110	13 Jan 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	SW111	05 Mar 2018	Normal	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.05	<0.12	<0.05	<0.05	<0.01	<0.01
QLD_0861_PFAS	SW112	19 Jan 2018	Normal	<0.02	<0.02	<0.02	<0.02	*0.03*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.03	0.03	0.02	0.01
QLD_0861_PFAS	SW113	20 Feb 2018	Normal	<0.002	<0.002	0.004	<0.002	*0.006*	<0.002	<0.01	<0.002

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	Perfluorooctane sulfonic acid (PFOS) - Branched
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.002	0.002	0.002
HEPA (2020) Recreational Water Guideline Value												**10**																		**2**			
HEPA (2020) Freshwater 99% Species Protection						*0.00023*						*19*																					
HEPA (2020) Freshwater 95% Species Protection						*0.13*						*220*																					
QLD_0861_PFAS	SW134	01 Jun 2018	Normal	<0.002	<0.002	0.005	<0.002	*0.008*	<0.002	<0.01	<0.002	0.006	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.013	0.019	0.006	0.002
QLD_0861_PFAS	SW135	01 Jun 2018	Normal	<0.002	<0.002	0.013	<0.002	*0.009*	<0.002	<0.01	<0.002	0.007	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.022	0.031	0.005	0.004
QLD_0861_PFAS	SW136	01 Jun 2018	Normal	<0.002	<0.002	0.005	<0.002	*0.007*	<0.002	<0.01	<0.002	0.003	<0.002	0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.012	0.019	0.004	0.003
QLD_0861_PFAS	SW137	04 Jun 2018	Normal	0.012	0.008	0.032	<0.002	*0.012*	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.044	0.064	0.004	0.008
QLD_0861_PFAS	SW138	02 Jun 2018	Normal	0.012	0.008	0.036	<0.002	*0.009*	<0.002	<0.01	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.045	0.067	0.002	0.007
QLD_0861_PFAS	SW139	02 Jun 2018	Normal	0.007	0.005	0.053	<0.002	*0.081*	<0.002	<0.01	<0.002	0.02	0.005	0.008	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.134	0.179	0.035	0.046
QLD_0861_PFAS	SW140	02 Jun 2018	Normal	<0.02	<0.02	0.03	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.05	0.05	0.02	<0.01
QLD_0861_PFAS	SW141	04 Jun 2018	Normal	<0.002	<0.002	<0.002	<0.002	*0.003*	<0.002	<0.01	<0.002	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.003	0.005	0.002	<0.002
QLD_0861_PFAS	SW142	05 Jun 2018	Normal	0.007	0.005	0.019	<0.002	*0.005*	<0.002	<0.01	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.024	0.039	0.002	0.003
QLD_0861_PFAS	SW143	05 Jun 2018	Normal	0.003	<0.002	0.012	<0.002	*0.021*	<0.002	<0.01	<0.002	0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.033	0.04	0.013	0.008
QLD_0861_PFAS	SW144	05 Jun 2018	Normal	0.003	<0.002	0.008	<0.002	*0.011*	<0.002	<0.01	<0.002	0.004	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.019	0.029	0.005	0.006
QLD_0861_PFAS	SW145	06 Jun 2018	Normal	<0.002	<0.002	0.003	<0.002	*0.012*	<0.002	<0.01	0.011	0.008	0.003	0.008	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.015	0.045	0.007	0.005
QLD_0861_PFAS	SW146	06 Jun 2018	Normal	0.003	<0.002	0.002	<0.002	*0.006*	<0.002	<0.01	<0.002	0.005	<0.002	0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.008	0.021	<0.002	0.006
QLD_0861_PFAS	SW147	05 Jun 2018	Normal	<0.002	<0.002	0.004	<0.002	*0.006*	<0.002	<0.01	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.01	0.013	0.004	0.002
QLD_0861_PFAS	SW148	05 Jun 2018	Normal	<0.002	<0.002	0.007	<0.002	*0.013*	<0.002	<0.01	0.005	0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.02	0.03	0.009	0.004
QLD_0861_PFAS	SW149	05 Jun 2018	Normal	0.003	0.003	0.023	<0.002	*0.015*	<0.002	<0.01	0.005	0.008	0.003	0.004	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.038	0.064	0.008	0.007
QLD_0861_PFAS	SW150	05 Jun 2018	Normal	0.016	0.017	0.124	0.003	*0.037*	<0.002	<0.01	0.025	0.057	0.018	0.014	0.003	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.161	0.314	0.012	0.025
QLD_0861_PFAS	SW151	09 Jun 2018	Normal	<0.002	<0.002	<0.002	<0.002	*0.002*	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.002	0.002	<0.002	0.002
QLD_0861_PFAS	SW151	09 Jun 2018	Interlab_D	<0.001	<0.001	0.003	<0.001	*0.005*	<0.002	0.005	<0.002	0.001	<0.001	0.001	<0.001	<0.002	<0.002	<0.005	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.005	<0.002	<0.005	<0.01	<0.002	<0.05	-	-	-	-
QLD_0861_PFAS	SW151	09 Jun 2018	Field_D	<0.002	<0.002	<0.002	<0.002	*0.003*	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.003	0.003	<0.002	0.003
QLD_0861_PFAS	SW152	09 Jun 2018	Normal	<0.002	<0.002	0.005	<0.002	*0.008*	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.013	0.013	0.006	0.002
QLD_0861_PFAS	SW153	09 Jun 2018	Normal	<0.002	<0.002	<0.002	<0.002	*0.002*	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.002	0.002	<0.002	0.002
QLD_0861_PFAS	SW154	09 Jun 2018	Normal	<0.002	<0.002	<0.002	<0.002	*0.003*	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.003	0.003	0.002	<0.002
QLD_0861_PFAS	SW155	09 Jun 2018	Normal	<0.002	<0.002	<0.002	<0.002	*0.003*	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.003	0.003	<0.002	0.003
QLD_0861_PFAS	SW156	09 Jun 2018	Normal	<0.002	<0.002	<0.002	<0.002	*0.003*	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.003	0.003	<0.002	0.003
QLD_0861_PFAS	SW157	11 Jun 2018	Normal	0.071	0.057	0.295	0.005	*0.05*	<0.002	<0.01	0.009	0.034	0.004	0.005	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.345	0.53	0.016	0.034
QLD_0861_PFAS	SW158	11 Jun 2018	Normal	0.017	0.012	0.078	0.003	*0.062*	<0.002	<0.01	0.024	0.042	0.011	0.009	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.14	0.258	0.032	0.03
QLD_0861_PFAS	SW159	11 Jun 2018	Normal	0.013	0.011	0.072	0.003	*0.068*	<0.002	<0.01	0.014	0.034	0.007	0.006	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	0.024	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.14	0.252	0.034	0.034
QLD_0861_PFAS	SW160	13 Jun 2018	Normal	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002
QLD_0861_PFAS	SW161	13 Jun 2018	Normal	<0.002	<0.002	0.003	<0.002	*0.005*	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.008	0.008	0.003	0.002
QLD_0861_PFAS	SW162	14 Jun 2018	Normal	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002
QLD_0861_PFAS	SW163	14 Jun 2018	Normal	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002
QLD_0861_PFAS	SW164	14 Jun 2018	Normal	0.008	0.009	0.028	<0.002	*0.048*	<0.002	<0.01	0.007	0.029	0.005	0.006	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.076	0.14	0.032	0.016
QLD_0861_PFAS	SW165	14 Jun 2018	Normal	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002
QLD_0861_PFAS	SW166	14 Jun 2018	Normal	<0.002	<0.002	0.004	<0.002	*0.015*	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.019	0.019	0.011	0.004
QLD_0861_PFAS	SW167	15 Jun 2018	Normal	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002
QLD_0861_PFAS	SW168	15 Jun 2018	Normal	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002
QLD_0861_PFAS	SW169	16 Jun 2018	Normal	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002
QLD_0861_PFAS	SW169	16 Jun 2018	Normal	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002
QLD_0861_PFAS	SW170	16 Jun 2018	Normal	<0.002	<0.002	<0.002	<0.002	*0.004*	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.004	0.004	0.003	<0.002
QLD_0861_PFAS	SW171	16 Jun 2018	Normal	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002
QLD_0861_PFAS	SW171	16 Aug 2018	Normal	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002
QLD_0861_PFAS	SW172	16 Jun 2018	Normal	0.005	<0.002	0.004	<0.002	*0.004*	<0.002	<0.01	0.003	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.008	0.016	<0.002	0.004
QLD_0861_PFAS	SW173	16 Jun 2018	Normal	<0.002	<0.002	<0.002	<0.002	*0.003*	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.005	<0.005	<0.005	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	0.003	0.003	<0.002	0.003
QLD_0861_PFAS	SW174	21 Jun 2018	Normal	0.02	0.02	0.14	<0.02	*0.11*	<0.02	<0.1	0.06	0.07	0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.25	0.45	0.05	0.06
QLD_0861_PFAS	SW174	21 Jun 2018	Interlab_D	0.02	0.02	0.13	<0.01	*0.07*	<0.02	<0.02	0.05	0.06	0.02	0.01	<0.01	<0.02	<0.02	<0.02	<0.05	<0.1	<0.01	<0.5	<0.01	0.03	<0.01	<0.01	<0.1	<0.05	<0.02	<0.05	<0.1	<0.02	<0.5	0.2	0.4	-	-
QLD_0861_PFAS	SW174	21 Jun 2018	Field_D	0.03	0.02	0.12	<0.02	*0.1*	<0.02	<0.1	0.06	0.08	0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.22	0.43	0.05	0.05
QLD_0861_PFAS	SW175	21 Jun 2018	Normal	0.03	0.02	0.16	<0.02	*0.14*	<0.02	<0.1	0.07	0.08	0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.07	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.3	0.6	0.09	0.05
QLD_0861_PFAS	SW176	29 Jun 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFAS	SW176	29 Jun 2018	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.05	<0.1	<0.5	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.02	<0.05	<0.1	<0.02	<0.5	<0.01	<0.01	-	-
QLD_0861_PFAS	SW176	29 Jun 2018	Field_D	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_0861_PFAS	SW177	03 Jul 2018	Normal	<0.02	<0.02	0.06	<0.02	*0.03*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09	-	-
QLD_0861_PFAS	SW177	03 Jul 2018	Field_D	<0.02	<0.02	0.06	<0.02	*0.03*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09	-	-
QLD_0861_PFAS	SW177	03 Jul 2018	Field_D	<0.02	<0.02	0.06	<0.02	*0.03*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.09	0.09	-	-
QLD_0861_PFAS	SW179	23 Jul 2018	Normal	<0.01	<0.01	<0.01	<0.01	*0.07*	<0.01	<0.05	<0.01	<0.01	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	0.13	-	-
QLD_0861_PFAS	SW179	23 Jul 2018	Interlab_D	<0.01	<0.01	<0.01	<0.01	*0.02*	<0.02	<0.02	<0.02	<0.01	0.01	0.04	<0.01	<0.02	<0.02	<0.05	<0.1	<0.5	<0.01	<0.01	<0.01	<0.01	<0.1	<0.05	<0.02	<0.05	<0.1	<0.02	<0.5	0.02	0.07	-	-
QLD_0861_PFAS	SW179	23 Jul 2018	Field_D	<0.01	<0.01	<0.01	<0.01	*0.07*	<0.01	<0.05	<0.01	<0.01	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	0.13	-	-
QLD_0861_PFAS	SW179	26 Jul 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	SW180	26 Jul 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	SW181	26 Jul 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	SW182	27 Jul 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	SW182	27 Jul 2018	Interlab_D	0.001	0.001	0.008	<0.001	*0.005*	<0.002	0.006	0.009	0.006	0.003	0.003	<0.001	<0.002	<0.002	<0.005	<0.01	<0.05	<0.001	<0.001	<0.001	<0.001	<0.01	<0.005	<0.002	<0.005	<0.01	<0.002	<0.05	-	-	-	-
QLD_0861_PFAS	SW182	27 Jul 2018	Field_D	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	SW183	27 Jul 2018	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	<0.01	<0.01
QLD_0861_PFAS	SW185	02 Oct 2018	Normal	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01	<0.1	-	-
QLD_0861_PFAS	SW185	02 Oct 2018	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.05	-	-	-	-
QLD_0861_PFAS	SW185	02 Oct 2018	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	Perfluorooctane sulfonic acid (PFOS) - Branched
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.002	0.002	0.002
HEPA (2020) Recreational Water Guideline Value												**10**																			**2**			
HEPA (2020) Freshwater 99% Species Protection						*0.00023*						*19*																						
HEPA (2020) Freshwater 95% Species Protection						*0.13*						*220*																						
Project ID	**Location**	**Date**	**Sample Type**																															
QLD_Hist_202012-3	SW203	09 Aug 2013	Normal	-	-	-	-	*3.69*	-	-	-	-	-	0.31	-	-	-	-	-	-	-	0.2	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW203	02 Mar 2017	Normal	0.81	0.42	2.9	0.08	*1.07*	*<0.02*	*<0.1*	0.46	0.79	0.13	0.37	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	0.43	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	**3.97**	7.46	-	-
QLD_Hist_202012-3	SW203	13 Oct 2017	Normal	0.27	0.16	1.01	0.05	*0.99*	*<0.02*	*<0.1*	0.13	0.4	0.07	0.14	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	2	3.22	-	-
QLD_Hist_202012-3	SW204	26 Jul 2012	Normal	-	-	-	-	*0.65*	-	-	-	-	-	0.07	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW204	09 Oct 2012	Normal	-	-	-	-	*1.48*	-	-	-	-	-	0.45	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW204	09 Aug 2013	Normal	-	-	-	-	*1.36*	-	-	-	-	-	0.07	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW204	02 Mar 2017	Normal	*<0.02*	0.03	0.34	*<0.02*	*0.23*	*<0.02*	*<0.1*	0.06	0.07	0.03	0.2	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	0.57	0.96	-	-
QLD_Hist_202012-3	SW204	13 Oct 2017	Normal	0.03	*<0.02*	0.13	*<0.02*	*0.2*	*<0.02*	*<0.1*	*<0.02*	0.02	*<0.02*	0.04	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	0.33	0.42	-	-
QLD_Hist_202012-3	SW205	03 Aug 2012	Normal	-	-	-	-	*29.2*	-	-	-	-	-	0.83	-	-	-	-	-	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW205	12 Oct 2012	Normal	-	-	-	-	*3.88*	-	-	-	-	-	0.07	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW205	21 Jan 2013	Normal	-	-	-	-	*2.49*	-	-	-	-	-	0.12	-	-	-	-	-	-	-	0.3	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW205	23 Aug 2013	Normal	-	-	-	-	*6.43*	-	-	-	-	-	0.13	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW206	03 Aug 2012	Normal	-	-	-	-	*1.75*	-	-	-	-	-	0.07	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW206	15 Oct 2012	Normal	-	-	-	-	*1.51*	-	-	-	-	-	0.04	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW206	18 Jan 2013	Normal	-	-	-	-	*0.4*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW206	18 Jan 2013	Field_D	-	-	-	-	*0.52*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW206	21 Aug 2013	Normal	-	-	-	-	*4.02*	-	-	-	-	-	0.2	-	-	-	-	-	-	-	0.8	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW206	01 Mar 2017	Normal	0.16	0.14	0.9	0.04	*1.38*	*<0.02*	*<0.1*	0.24	0.41	0.1	0.13	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	0.57	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	**2.28**	4.07	-	-
QLD_Hist_202012-3	SW206	06 Oct 2017	Normal	0.14	0.17	0.79	0.03	*1.39*	*<0.02*	*<0.1*	*<0.02*	0.4	0.14	0.11	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	0.08	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	**2.18**	3.25	-	-
QLD_Hist_202012-3	SW207	02 Oct 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW207	03 Mar 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	SW207	03 Mar 2017	Field_D	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*	0.01	*<0.01*	*<0.01*	*<0.05*	*<0.01*	*<0.01*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	-	-	-	-
QLD_Hist_202012-3	SW207	03 Mar 2017	Field_D	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	SW207	17 Oct 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	SW207	17 Oct 2017	Field_D	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	0.03	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.01*	0.03	-	-
QLD_Hist_202012-3	SW208	02 Oct 2013	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	*<0.02*	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW208	03 Mar 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	SW208	18 Oct 2017	Normal	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	SW208	18 Oct 2017	Field_D	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.02*	*<0.05*	*<0.01*	*<0.01*	-	-
QLD_Hist_202012-3	SW209	27 Jul 2012	Normal	-	-	-	-	*<0.02*	-	-	-	-	-	0.04	-	-	-	-	-	-	-	*<0.1*	-	-	-	-	-	-	-	-	-	-	-	-

		Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids											Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
		PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	Perfluorooctane sulfonic acid (PFOS) - Branched
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.002	0.005	0.002	0.005	0.005	0.002	0.005	0.001	0.002	0.002	0.002
HEPA (2020) Recreational Water Guideline Value												**10**																		**2**			
HEPA (2020) Freshwater 99% Species Protection						*0.00023*						*19*																					
HEPA (2020) Freshwater 95% Species Protection						*0.13*						*220*																					
QLD_Hist_202012-3	SW209	09 Oct 2012	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW209	16 Jan 2013	Normal	-	-	-	-	*1.01*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW209	15 Aug 2013	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW209	02 Mar 2017	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_Hist_202012-3	SW209	17 Oct 2017	Normal	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.01	<0.01	-	-
QLD_Hist_202012-3	SW210	03 Aug 2012	Normal	-	-	-	-	*3.12*	-	-	-	-	-	0.16	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW210	06 Oct 2017	Normal	0.35	0.43	1.98	0.09	*3.07*	<0.02	<0.1	0.61	0.99	0.45	0.35	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.12	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**5.05**	8.49	-	-
QLD_Hist_202012-3	SW211	03 Mar 2017	Normal	0.19	0.12	1.15	0.03	*1.8*	<0.02	<0.1	0.29	0.51	0.06	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.41	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**2.95**	4.69	-	-
QLD_Hist_202012-3	SW211	13 Oct 2017	Normal	0.06	0.03	0.18	<0.02	*0.09*	<0.02	<0.1	<0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.27	0.45	-	-
QLD_Hist_202012-3	SW212	06 Aug 2012	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW212	12 Oct 2012	Normal	-	-	-	-	*0.86*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW212	21 Jan 2013	Normal	-	-	-	-	*1.34*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW212	22 Aug 2013	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW212	03 Mar 2017	Normal	0.1	0.06	<0.02	<0.02	*0.88*	<0.02	<0.1	0.12	0.24	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.1	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.88	1.59	-	-
QLD_Hist_202012-3	SW212	12 Oct 2017	Normal	<0.02	0.08	0.28	<0.02	*0.42*	<0.02	<0.1	<0.02	0.13	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.7	0.95	-	-
QLD_Hist_202012-3	SW213	06 Aug 2012	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW213	11 Oct 2012	Normal	-	-	-	-	*0.08*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW213	21 Jan 2013	Normal	-	-	-	-	*1.01*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW213	22 Aug 2013	Normal	-	-	-	-	<0.02	-	-	-	-	-	0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW213	03 Mar 2017	Normal	<0.02	<0.02	0.06	<0.02	*0.08*	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.14	0.17	-	-
QLD_Hist_202012-3	SW213	06 Oct 2017	Normal	<0.02	0.03	0.16	<0.02	*0.64*	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.8	0.91	-	-
QLD_Hist_202012-3	SW214	01 Mar 2017	Normal	<0.02	<0.02	0.03	<0.02	*0.07*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.1	0.1	-	-
QLD_Hist_202012-3	SW214	12 Oct 2017	Normal	<0.02	0.04	0.14	<0.02	*0.38*	<0.02	<0.1	<0.02	0.06	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.52	0.63	-	-
QLD_Hist_202012-3	SW215	11 Oct 2012	Normal	-	-	-	-	*0.05*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW215	21 Jan 2013	Normal	-	-	-	-	*0.85*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW215	22 Aug 2013	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW215	15 Mar 2017	Normal	0.04	0.03	0.23	<0.02	*0.2*	<0.02	<0.1	0.05	0.07	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.43	0.67	-	-
QLD_Hist_202012-3	SW216	06 Aug 2012	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW216	12 Oct 2012	Normal	-	-	-	-	*0.02*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW216	21 Jan 2013	Normal	-	-	-	-	*0.12*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW216	23 Aug 2013	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW216	28 Feb 2017	Normal	<0.02	<0.02	0.04	<0.02	*0.03*	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	0.15	-	-
QLD_Hist_202012-3	SW216	10 Oct 2017	Normal	<0.02	<0.02	0.04	<0.02	*0.04*	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.08	0.1	-	-
QLD_Hist_202012-3	SW217	03 Aug 2012	Normal	-	-	-	-	*1.29*	-	-	-	-	-	0.09	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW217	28 Feb 2017	Normal	1.46	1.23	5.9	0.1	*4.08*	<0.02	0.4	1.65	3.47	0.71	0.77	0.07	0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.32	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**9.98**	20.2	-	-
QLD_Hist_202012-3	SW217	28 Feb 2017	Field_D	1.5	1.26	5.86	0.21	*3.88*	<0.02	0.4	1.62	3.38	0.72	0.76	0.06	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.33	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**9.74**	20	-	-
QLD_Hist_202012-3	SW217	06 Oct 2017	Normal	0.33	0.37	1.73	0.1	*2.74*	<0.02	0.1	0.48	0.88	0.37	0.29	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.11	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.47**	7.54	-	-
QLD_Hist_202012-3	SW218	28 Feb 2017	Normal	0.05	0.04	0.32	<0.02	*0.51*	<0.02	<0.1	0.06	0.1	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.09	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.83	1.22	-	-
QLD_Hist_202012-3	SW218	06 Oct 2017	Normal	0.05	0.04	0.28	<0.02	*0.45*	<0.02	<0.1	0.03	0.15	0.04	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.73	1.08	-	-
QLD_Hist_202012-3	SW219	06 Aug 2012	Normal	-	-	-	-	*0.27*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW219	12 Oct 2012	Normal	-	-	-	-	*0.36*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW219	21 Jan 2013	Normal	-	-	-	-	*2.17*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW219	23 Aug 2013	Normal	-	-	-	-	*0.64*	-	-	-	-	-	0.04	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW220	03 Aug 2012	Normal	-	-	-	-	*0.35*	-	-	-	-	-	0.06	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW223	02 Aug 2012	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW223	11 Oct 2012	Normal	-	-	-	-	*0.05*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW223	17 Jan 2013	Normal	-	-	-	-	*1.31*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW223	23 Aug 2013	Normal	-	-	-	-	*0.97*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW224	02 Aug 2012	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW224	10 Oct 2012	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW224	18 Jan 2013	Normal	-	-	-	-	*0.35*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW224	20 Aug 2013	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW224	02 Mar 2017	Normal	<0.02	<0.02	0.04	<0.02	*0.03*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.07	0.07	-	-
QLD_Hist_202012-3	SW224	16 Oct 2017	Normal	1.52	1.33	6.84	0.24	*5.58*	<0.02	0.6	0.73	1.66	0.15	0.16	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**12.4**	18.8	-	-
QLD_Hist_202012-3	SW225	03 Aug 2012	Normal	-	-	-	-	*19.8*	-	-	-	-	-	1.19	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW225	12 Oct 2012	Normal	-	-	-	-	*5.8*	-	-	-	-	-	0.2	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW225	21 Jan 2013	Normal	-	-	-	-	*9.35*	-	-	-	-	-	0.82	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW225	22 Aug 2013	Normal	-	-	-	-	*6.4*	-	-	-	-	-	0.28	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW225	10 Oct 2017	Normal	0.52	0.38	2.48	0.17	*7.26*	0.03	0.2	0.46	1.09	0.19	0.28	0.04	0.03	<0.02	<0.02	<0.02	<0.05	<0.05	1.08	0.26	<0.05	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**9.74**	14.5	-	-
QLD_Hist_202012-3	SW226	03 Aug 2012	Normal	-	-	-	-	*0.43*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW227	10 Oct 2017	Normal	0.5	0.45	3.41	0.21	*7.63*	0.03	0.2	0.49	1.15	0.25	0.37	0.05	0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.83	0.11	<0.05	0.03	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**11**	15.7	-	-
QLD_Hist_202012-3	SW228	27 Jul 2012	Normal	-	-	-	-	*0.04*	-	-	-	-	-	0.04	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW228	09 Oct 2012	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW228	18 Jan 2013	Normal	-	-	-	-	*1.47*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW228	15 Aug 2013	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW228	02 Mar 2017	Normal	<0.02	<0.02	0.05	<0.02	*0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.06	0.06	-	-
QLD_Hist_202012-3	SW228	16 Oct 2017	Normal	<0.02	<0.02	0.06	<0.02	*0.11*	<0.02	<0.1	<0.02	0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.17	0.2	-	-
QLD_Hist_202012-3	SW229	02 Aug 2012	Normal	-	-	-	-	*16.1*	-	-	-	-	-	0.69	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW229	11 Oct 2012	Normal	-	-	-	-	*0.03*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW229	17 Jan 2013	Normal	-	-	-	-	*0.81*	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW229	21 Aug 2013	Normal	-	-	-	-	<0.02	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW229	02 Mar 2017	Normal	<0.02	<0.02	0.02	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.04	0.04	-	-
QLD_Hist_202012-3	SW229	16 Oct 2017	Normal	<0.02	0.03	0.17	<0.02	*0.3*	<0.02	<0.1	<0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	0.47	0.55	-	-
QLD_Hist_202012-3	SW237	10 Nov 2011	Normal	-	-	-	-	*37.4*	-	-	-	-	-	*61*	-	-	-	-	-	-	-	46	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW237	10 Nov 2011	Field_D	-	-	-	-	*22.2*	-	-	-	-	-	*57.6*	-	-	-	-	-	-	-	39	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SW238	08 Nov 2011	Normal	-	-	-	-	*15*	-	-	-	-	-	3.18	-	-	-	-	-	-	-	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_0861_Stage2	SW303	13 Jun 2018	Normal	<0.10	-	<0.10	-	<0.10	-	<0.5	<0.10	<0.10	<0.10	<0.10	-	-	-	-	<0.10	-	-	<0.10	<0.10	<0.10	<0.10	-	<0.10	-	-	-	<0.10	-	-	-	-	-	-
QLD_0861_PFASMGMT	SW521	10 Aug 2021	Normal	0.15	0.11	0.7	<0.02	*0.54*	<0.02	<0.1	0.06	0.19	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.24	1.77	-	-
QLD_0861_PFASMGMT	SW523	10 Aug 2021	Normal	1.41	1.48	13	0.42	*7.62*	<0.05	<0.2	0.31	2.2	0.24	0.38	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	<0.05	<0.12	**20.6**	27.1	-	-
QLD_0861_PFASMGMT	SW528	10 Aug 2021	Normal	0.18	0.21	1.87	0.07	*2.8*	<0.02	<0.1	0.19	0.42	0.05	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	**4.67**	5.86	-	-
QLD_0861_PFASMGMT	SW530	10 Aug 2021	Normal	0.15	0.11	0.55	0.02	*0.59*	<0.02	<0.1	0.13	0.29	0.05	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.06	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.14	2.02	-	-
QLD_0861_PFASMGMT	SW530	10 Aug 2021	Interlab_D	0.09	0.08	0.52	0.02	*0.46*	<0.01	0.08	0.09	0.21	0.05	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.05	<0.01	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.98	1.72	-	-
QLD_0861_PFASMGMT	SW530	10 Aug 2021	Field_D	0.15	0.11	0.57	0.02	*0.66*	<0.02	<0.1	0.13	0.3	0.06	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.05	0.06	<0.05	<0.05	<0.02	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	1.23	2.14	-	-

µg/L is micrograms per litre
-' denotes no analysis undertaken
<' denotes concentration is less than

Table T5 Sediment PFAS Analytical Results

				Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids										Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
				PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSA A	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
			Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			LOR	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0005	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0001	0.0002	0.0002
Project ID	**Location**	**Date**	**Type**																																
QLD_0861_PFAS	SD0006	07 Mar 2018	Normal	0.0048	0.0044	0.0386	0.0037	0.264	0.0044	0.002	0.0034	0.0083	0.0027	0.005	0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0008	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	0.303	0.343	0.212	0.052
QLD_0861_PFAS	SD0006	07 Mar 2018	Interlab_D	0.0057	0.0066	0.067	0.01	0.39	0.019	0.0029	0.0044	0.015	0.0038	0.0091	0.0031	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	0.002	<0.001	<0.0002	<0.001	<0.001	<0.0002	<0.005	-	-	-	-
QLD_0861_PFAS	SD0006	07 Mar 2018	Field_D	0.0037	0.0038	0.0336	0.004	0.202	0.0039	0.001	0.0028	0.0077	0.0029	0.0057	0.0018	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0013	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	0.236	0.274	0.154	0.048
QLD_Hist_202012-3	SD001	27 Jul 2012	Normal	-	-	-	-	0.17	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD001	27 Jul 2012	Normal	-	-	-	-	0.0784	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD001	09 Oct 2012	Normal	-	-	-	-	0.0725	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD001	09 Oct 2012	Normal	-	-	-	-	0.999	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD001	16 Jan 2013	Normal	-	-	-	-	0.182	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD001	16 Jan 2013	Normal	-	-	-	-	0.136	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD001	09 Aug 2013	Normal	-	-	-	-	0.0186	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD001	09 Aug 2013	Normal	-	-	-	-	0.0296	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD001	02 Mar 2017	Normal	0.0008	0.0011	0.0116	0.0009	0.0694	0.0016	0.001	0.0022	0.004	0.0013	0.0026	0.0007	0.0007	0.0005	0.0003	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0007	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.081	0.0994	-	-
QLD_Hist_202012-3	SD001	13 Oct 2017	Normal	0.0023	0.0019	0.0272	0.0024	0.187	0.0084	<0.001	0.0015	0.0047	0.0018	0.0051	0.0007	0.002	0.0016	0.0019	<0.0002	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	0.006	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	0.214	0.254	-	-
QLD_0861_PFAS	SD002	13 Sep 2017	Normal	<0.0002	<0.0002	0.0006	<0.0002	0.0174	0.0003	<0.001	<0.0002	0.0003	<0.0002	<0.0002	0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.018	0.0191	0.0138	0.0036
QLD_0861_PFAS	SD002	13 Sep 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0015	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.0015	0.0015	0.0012	0.0003
QLD_0861_PFAS	SD002	29 Apr 2019	Normal	<0.0002	<0.0002	0.0015	<0.0002	0.008	<0.0002	<0.001	0.0062	0.0087	0.002	0.0006	<0.0002	0.0004	0.0005	0.0004	<0.0002	<0.0005	<0.0005	0.0353	0.003	0.0006	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0095	0.0672	-	-
QLD_0861_PFASOMP	SD002	15 Apr 2020	Normal	<0.0005	<0.0005	0.0013	<0.0005	0.0074	<0.0005	<0.001	0.0009	0.0011	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	0.0022	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0087	0.0137	-	-
QLD_0861_PFASOMP	SD002	16 Oct 2020	Normal	<0.0005	<0.0005	0.0019	<0.0005	0.0144	0.0008	<0.002	0.0031	0.0033	0.0019	0.0008	0.001	0.0015	0.0026	0.0025	0.0006	<0.0012	<0.0005	0.0084	0.0008	0.0014	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0163	0.045	-	-
QLD_0861_PFASOMP	SD002	30 Mar 2021	Normal	<0.0005	<0.0005	0.0006	<0.0005	0.008	0.0011	<0.002	0.001	0.0008	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0086	0.0123	-	-
QLD_0861_PFASOMP	SD002	25 Oct 2021	Normal	<0.0002	<0.0002	0.0027	<0.0002	0.0407	0.0018	<0.001	0.0024	0.0021	0.0018	0.0009	0.0012	0.0016	0.0022	0.0023	0.0006	<0.0006	<0.0005	0.0006	<0.0005	<0.0005	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	0.0434	0.0609	-	-
QLD_0861_PFASOMP	SD002	28 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD002	28 Mar 2022	Interlab_D	<0.001	<0.001	0.0014	<0.001	0.018	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	-	-	-	-
QLD_0861_PFASOMP	SD002	28 Mar 2022	Field_D	<0.0002	<0.0002	0.001	<0.0002	0.0125	<0.0002	<0.001	0.0005	0.0004	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0003	0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0135	0.0153	-	-
QLD_0861_PFASOMP	SD002	21 Oct 2022	Normal	<0.0002	<0.0002	0.0009	<0.0002	0.0139	0.0008	<0.001	0.0002	0.0004	<0.0002	0.0002	<0.0002	0.0002	0.0006	0.0009	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0148	0.0184	-	-
QLD_0861_PFASOMP_23	SD002	18 Apr 2023	Normal	<0.0002	<0.0002	0.0006	<0.0002	0.0133	0.0003	<0.001	0.0004	0.0004	<0.0002	<0.0002	0.0003	0.0005	0.0007	0.0008	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0006	<0.0002	<0.0005	<0.0006	<0.0002	<0.0005	0.0139	0.0176	-	-
QLD_0861_PFAS	SD003	13 Sep 2017	Normal	<0.0002	<0.0002	0.0013	<0.0002	0.0186	0.0011	<0.001	0.0012	0.0016	0.0006	0.0005	0.0003	0.0007	0.001	0.0008	<0.0002	<0.0005	<0.0005	<0.0005	0.0005	0.0006	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0199	0.0288	0.017	0.0016
QLD_0861_PFAS	SD003	13 Sep 2017	Normal	<0.0002	<0.0002	0.0017	0.0002	0.0418	0.0005	<0.001	0.0004	0.001	0.0007	0.0013	0.0006	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0435	0.0482	0.0366	0.0052
QLD_0861_PFAS	SD003	29 Apr 2019	Normal	0.0006	0.0006	0.006	0.0007	0.0757	0.002	<0.001	0.0009	0.0018	0.0004	0.0011	0.0003	0.0005	0.0011	0.0012	<0.0002	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0817	0.0937	-	-
QLD_0861_PFASOMP	SD003	15 Apr 2020	Normal	0.0006	<0.0005	0.0039	<0.0005	0.0295	<0.0005	<0.001	0.0016	0.0026	0.0007	0.0005	0.0006	<0.0005	0.0008	<0.0005	<0.0005	<0.0012	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0150	<0.0005	<0.0012	0.0334	0.0415	-	-
QLD_0861_PFASOMP	SD003	16 Oct 2020	Normal	0.0007	0.0008	0.006	<0.0005	0.0304	0.0012	<0.002	0.004	0.0046	0.0015	0.0018	0.0005	0.0007	0.001	0.0009	<0.0005	<0.0012	<0.0005	0.001	<0.0005	0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0364	0.0556	-	-
QLD_0861_PFASOMP	SD003	30 Mar 2021	Normal	<0.0005	<0.0005	0.0023	<0.0005	0.0092	<0.0005	<0.002	0.0006	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0013	<0.0013	<0.0005	<0.0013	0.0115	0.0132	-	-
QLD_0861_PFASOMP	SD003	22 Oct 2021	Normal	<0.0002	<0.0002	0.0013	<0.0002	0.0284	0.0016	<0.001	0.001	0.001	0.0005	0.0005	0.0006	0.0009	0.0008	0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0297	0.0371	-	-
QLD_0861_PFASOMP	SD003	28 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD003	21 Oct 2022	Normal	<0.0002	<0.0002	0.0046	0.0003	0.0268	0.0005	<0.001	0.0021	0.002	0.0016	0.0026	0.0007	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0314	0.0414	-	-
QLD_0861_PFASOMP_23	SD003	18 Apr 2023	Normal	0.0002	0.0002	0.0027	0.0003	0.0268	0.0004	<0.001	0.0003	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	0.0006	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0295	0.0323	-	-
QLD_0861_PFAS	SD004	31 May 2017	Normal	<0.0002	<0.0002	0.0002	<0.0002	0.0032	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0034	0.0034	0.0028	0.0004
QLD_0861_PFAS	SD004	31 May 2017	Normal	<0.0002	<0.0002	0.0002	<0.0002	0.0046	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0048	0.0048	0.0039	0.0007
QLD_0861_PFAS	SD004	02 May 2019	Normal	<0.0002	<0.0002	0.0004	<0.0002	0.017	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0174	0.0176	-	-
QLD_0861_PFAS	SD004	19 Nov 2019	Normal	<0.0002	<0.0002	0.0002	<0.0002	0.003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	0.0032	0.0032	-	-
QLD_0861_PFASOMP	SD004	14 Apr 2020	Normal	<0.0005	<0.0005	<0.0005	<0.0005	0.0028	<0.0005	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0028	0.0028	-	-
QLD_0861_PFASOMP	SD004	12 Oct 2020	Normal	<0.0005	<0.0005	0.0011	<0.0005	0.0047	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0058	0.0058	-	-
QLD_0861_PFASOMP	SD004	14 Apr 2021	Normal	<0.0002	<0.0002	0.0003	<0.0002	0.0059	<0.0110	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0062	0.0062	-	-
QLD_0861_PFASOMP	SD004	19 Oct 2021	Normal	<0.0002	<0.0002	0.0006	<0.0002	0.0045	0.0005	<0.001	0.0004	0.0006	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0051	0.0069	-	-
QLD_0861_PFASOMP	SD004	29 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0013	<0.0062	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0013	0.0013	-	-
QLD_0861_PFASOMP	SD004	18 Oct 2022	Normal	<0.0002	<0.0002	0.0008	<0.0002	0.0016	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0024	0.0024	-	-
QLD_0861_PFASOMP_23	SD004	28 Apr 2023	Normal	<0.0002	<0.0002	<0.0004	<0.0002	0.0084	<0.107	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0084	0.0089	-	-
QLD_0861_PFAS	SD005	31 May 2017	Normal	<0.0002	<0.0002	0.0121	0.0014	0.531	0.0041	<0.001	<0.0002	0.0032	0.0005	0.0013	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.543	0.556	0.475	0.056
QLD_0861_PFAS	SD005	31 May 2017	Normal	<0.0002	0.0004	0.0071	0.0008	0.478	0.0112	<0.001	<0.0002	0.0014	0.0003	0.0007	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0064	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.485	0.506	0.436	0.042
QLD_0861_PFAS	SD005	30 Apr 2019	Normal	0.0012	0.0008	0.0111	0.0006	0.126	<0.0010	<0.001	0.0007	0.0021	0.0003	0.0009	<0.0002	<0.0002	<0.0006	<0.0005	<0.0002	<0.0005	<0.0005	0.0016	<0.0005	<0.0005	0.0069	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.137	0.152	-	-
QLD_0861_PFAS	SD005	30 Apr 2019	Normal	0.0017	0.0008	0.0122	0.0007	0.156	<0.0011	<0.001	0.0006	0.0022	<0.0002	0.0008	<0.0002	<0.0002	<0.0007	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0492	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.168	0.224	-	-
QLD_0861_PFAS	SD005	18 Nov 2019	Normal	0.0002	<0.0002	0.0009	<0.0002	0.007	0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0079	0.0089	-	-
QLD_0861_PFAS	SD005	19 Nov 2019	Normal	0.0002	<0.0002	0.0005	<0.0002	0.0064	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0069	0.0071	-	-
QLD_0861_PFASOMP	SD005	14 Apr 2020	Normal	<0.0005	<0.0005	<0.0005	<0.0005	0.0031	<0.0005	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0031	0.0031	-	-
QLD_0861_PFASOMP	SD005	12 Oct 2020	Normal	0.005	<0.0005	0.0348	<0.0005	0.0201	<0.0038	<0.002	<0.0005	0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0398	0.041	-	-
QLD_0861_PFASOMP	SD005	12 Apr 2021	Normal	<0.0005	<0.0005	0.0014	<0.0005	0.0201	<0.0038	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0030	<0.0005	<0.0013	<0.0005	<0.0013	<0.0005	<0.0013	0.0215	0.0215	-	-
QLD_0861_PFASOMP	SD005	19 Oct 2021	Normal	<0.0006	<0.0005	0.0012	<0.0005	0.0092	<0.0008	<0.002	<0.0005	<0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0104	0.0104	-	-
QLD_0861_PFASOMP	SD005	29 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0023	0.0005	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0025	0.003	-	-
QLD_0861_PFASOMP	SD005	18 Oct 2022	Normal	<0.0010	<0.0010	0.0049	<0.0010	0.113	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	0.118	0.118	-	-
QLD_0861_PFASOMP	SD005	18 Oct 2022	Interlab_D	<0.001	<0.001	0.0045	<0.001	0.12	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	-	-	-	-
QLD_0861_PFASOMP	SD005	18 Oct 2022	Field_D	<0.0010	<0.0010	0.003	<0.0010	0.131	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0026	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0026	<0.0010	<0.0026	<0.0026	<0.0010	<0.0026	0.134	0.134	-	-
QLD_0861_PFASOMP_23	SD005	28 Apr 2023	Normal	0.0014	<0.0010	0.0181	<0.0022	0.335	<0.0034	<0.005	<0.0010	0.0029	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0024	<0.0010	<0.0010	<0.0010	<0.0010	0.0238	<0.0024	<0.0010	<0.0024	<0.0024	<0.0010	<0.0024	0.353	0.381	-	-
QLD_0861_PFAS	SD007	31 May 2017	Normal	<0.0002	<0.0002	0.0003	<0.0002	0.0126	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0129	0.0129	0.0114	0.0012
QLD_0861_PFAS	SD007	31 May 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0033	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0033	0.0033	0.003	0.0003
QLD_0861_PFAS	SD007	10 May 2019	Normal	<0.0002	<0.0002	0.0005	<0.0002	0.0087	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0092	0.0092	-	-
QLD_Hist_202012-3	SD008	26 Jul 2012	Normal	-	-	-	-	0.182	-	-	-	-	-	0.0029	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD008	26 J

				Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids										Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
				PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSA A	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
			Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			LOR	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0005	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0001	0.0002	0.0002
Project ID	**Location**	**Date**	**Type**																																
QLD_Hist_202012-3	SD013	01 Mar 2017	Normal	<0.0002	<0.0002	0.0003	<0.0002	0.0019	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0022	0.0022	-	-
QLD_Hist_202012-3	SD013	06 Oct 2017	Normal	0.0004	0.0004	0.0052	0.0006	0.0548	0.0004	<0.001	0.0004	0.0012	0.0005	0.0006	0.0003	0.001	0.0006	0.0008	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0014	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.06	0.0686	-	-
QLD_0861_PFAS	SD014	05 Jun 2017	Normal	<0.0002	<0.0002	0.001	0.0015	0.0236	0.0014	<0.001	<0.0002	0.0009	0.0003	0.0008	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0019	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0246	0.0314	0.0178	0.0058
QLD_0861_PFAS	SD014	05 Jun 2017	Normal	<0.0002	<0.0002	0.0019	0.0004	0.011	0.0003	<0.001	<0.0002	0.0006	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0129	0.0146	0.0081	0.0029
QLD_Hist_202012-3	SD015	01 Aug 2012	Normal	-	-	-	-	0.363	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD015	01 Aug 2012	Normal	-	-	-	-	0.0167	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD015	11 Oct 2012	Normal	-	-	-	-	0.0095	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD015	11 Oct 2012	Normal	-	-	-	-	0.0129	-	-	-	-	-	0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD015	17 Jan 2013	Normal	-	-	-	-	0.0116	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD015	17 Jan 2013	Normal	-	-	-	-	0.0348	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD015	17 Jan 2013	Field_D	-	-	-	-	0.0161	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD015	21 Aug 2013	Normal	-	-	-	-	0.001	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD015	21 Aug 2013	Normal	-	-	-	-	0.0205	-	-	-	-	-	0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD015	02 Mar 2017	Normal	<0.001	<0.001	0.0014	<0.001	0.01	<0.001	<0.001	<0.001	0.0011	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.0025	0.0114	0.0125	-	-
QLD_0861_PFAS	SD015	05 Jun 2017	Normal	<0.0002	<0.0002	<0.0002	0.0002	0.0049	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0049	0.0051	0.0037	0.0012
QLD_0861_PFAS	SD015	05 Jun 2017	Normal	<0.0002	<0.0002	<0.0002	0.0004	0.0023	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0023	0.0027	0.0019	0.0004
QLD_Hist_202012-3	SD015	16 Oct 2017	Normal	<0.0002	<0.0002	0.0006	<0.0002	0.0098	<0.0002	<0.001	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0104	0.0106	-	-
QLD_0861_PFAS	SD015	30 Apr 2019	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0177	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0177	0.0177	-	-
QLD_0861_PFAS	SD015	19 Nov 2019	Normal	<0.0002	<0.0002	0.0004	<0.0002	0.0149	0.0012	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0026	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0153	0.0195	-	-
QLD_0861_PFASOMP	SD015	14 Apr 2020	Normal	<0.0005	<0.0005	<0.0005	<0.0005	0.0013	<0.0005	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0013	0.0019	-	-
QLD_0861_PFASOMP	SD015	12 Oct 2020	Normal	<0.0005	<0.0005	<0.0005	<0.0005	0.001	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.001	0.001	-	-
QLD_0861_PFASOMP	SD015	12 Apr 2021	Normal	<0.0002	<0.0002	0.0003	<0.0002	0.0057	<0.0006	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.006	0.006	-	-
QLD_0861_PFASOMP	SD015	19 Oct 2021	Normal	<0.0012	<0.0012	<0.0018	<0.0012	<0.0154	<0.0012	<0.006	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0031	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0031	<0.0012	<0.0031	<0.0031	<0.0012	<0.0031	<0.0012	<0.0012	-	-
QLD_0861_PFASOMP	SD015	29 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0036	<0.0002	<0.0020	<0.0005	<0.001	0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0004	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.004	0.0048	-	-
QLD_0861_PFASOMP	SD015	18 Oct 2022	Normal	<0.0002	<0.0002	0.0002	<0.0002	0.0042	0.0006	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0044	0.005	-	-
QLD_0861_PFASOMP_23	SD015	26 Apr 2023	Normal	<0.0002	<0.0002	0.0005	<0.0002	0.0057	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	0.0062	0.0062	-	-
QLD_0861_PFAS	SD016	05 Jun 2017	Normal	0.0011	0.0005	0.0046	0.0014	0.242	0.002	<0.001	0.0003	0.0025	0.0004	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.247	0.257	0.199	0.043
QLD_0861_PFAS	SD016	05 Jun 2017	Normal	0.002	0.001	0.0084	0.0046	0.58	0.0053	<0.001	0.0012	0.0041	0.0008	0.0028	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0014	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.588	0.612	0.465	0.115
QLD_0861_PFAS	SD016	30 Apr 2019	Normal	<0.0013	<0.0002	0.0012	0.0002	0.0086	<0.0002	<0.001	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0004	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0098	0.0108	-	-
QLD_0861_PFASOMP	SD016	19 Nov 2019	Normal	<0.0002	<0.0002	0.0002	<0.0002	0.0029	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0031	0.0031	-	-
QLD_0861_PFASOMP	SD016	14 Apr 2020	Normal	<0.0010	<0.0010	<0.0010	<0.0010	0.004	<0.0010	<0.001	<0.0010	0.0014	0.0011	<0.0010	<0.0010	<0.0080	<0.0042	<0.0014	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	0.004	0.0065	-	-
QLD_0861_PFASOMP	SD016	12 Oct 2020	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	-	-
QLD_0861_PFASOMP	SD016	12 Apr 2021	Normal	<0.0005	<0.0005	<0.0005	<0.0005	0.0046	<0.0014	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0046	0.0046	-	-
QLD_0861_PFASOMP	SD016	19 Oct 2021	Normal	<0.0005	<0.0005	0.0024	<0.0005	0.0104	<0.0005	<0.002	<0.0005	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0128	0.0136	-	-
QLD_0861_PFASOMP	SD016	29 Mar 2022	Normal	0.0005	0.0006	0.006	<0.0005	0.0054	<0.0018	<0.002	0.0008	0.0023	0.0006	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0020	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0114	0.017	-	-
QLD_0861_PFASOMP	SD016	18 Oct 2022	Normal	<0.0002	<0.0002	<0.0004	<0.0002	0.0061	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0061	0.0061	-	-
QLD_0861_PFASOMP_23	SD016	28 Apr 2023	Normal	<0.0002	<0.0002	<0.0004	<0.0014	0.0045	<0.0032	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0045	0.0045	-	-
QLD_0861_PFAS	SD017	05 Jun 2017	Normal	0.0066	0.0042	0.0361	0.0055	0.0622	0.0011	0.001	0.0023	0.0206	0.0022	0.0093	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.001	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0983	0.152	0.0306	0.0316
QLD_0861_PFAS	SD017	05 Jun 2017	Normal	0.0074	0.0058	0.0729	0.0098	0.116	0.0019	0.001	0.0033	0.026	0.0031	0.0146	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0012	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.189	0.263	0.0511	0.0649
QLD_0861_PFAS	SD018	01 Jun 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.003	0.003	0.0027	0.0003
QLD_0861_PFAS	SD018	01 Jun 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0059	0.0003	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0059	0.0062	0.0051	0.0008
QLD_0861_PFAS	SD018	30 Apr 2019	Normal	<0.0014	<0.0002	0.0018	<0.0002	0.019	0.0003	<0.001	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0208	0.0214	-	-
QLD_0861_PFAS	SD018	19 Nov 2019	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0035	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0035	0.0035	-	-
QLD_0861_PFASOMP	SD018	14 Apr 2020	Normal	<0.0005	<0.0005	<0.0005	<0.0005	0.0007	<0.0005	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0007	0.0007	-	-
QLD_0861_PFASOMP	SD018	12 Oct 2020	Normal	<0.0005	<0.0005	0.0005	<0.0005	0.0022	<0.0005	<0.002	0.0007	0.0016	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0027	0.005	-	-
QLD_0861_PFASOMP	SD018	12 Apr 2021	Normal	<0.0005	<0.0005	<0.0005	<0.0005	0.0104	0.0287	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0013	<0.0013	<0.0005	<0.0013	0.0104	0.0391	-	-
QLD_0861_PFASOMP	SD018	19 Oct 2021	Normal	<0.0010	<0.0010	<0.0010	<0.0010	0.0064	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	0.0064	0.0064	-	-
QLD_0861_PFASOMP	SD018	29 Mar 2022	Normal	<0.0002	<0.0002	0.0032	0.0003	0.0248	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.028	0.0283	-	-
QLD_0861_PFASOMP	SD018	18 Oct 2022	Normal	<0.0010	<0.0010	<0.0010	<0.0010	<0.0080	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0010	<0.0010	-	-
QLD_0861_PFASOMP_23	SD018	28 Apr 2023	Normal	<0.0005	<0.0005	<0.0005	<0.0005	0.0074	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0074	0.0074	-	-
QLD_0861_PFASOMP_23	SD018	28 Apr 2023	Interlab_D	0.0017	0.0017	0.013	<0.001	0.21	0.0024	<0.002	<0.002	0.0018	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	0.0019	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	-	-	-	-
QLD_0861_PFASOMP_23	SD018	28 Apr 2023	Field_D	0.0015	0.0015	0.0155	<0.0026	0.174	<0.0024	<0.001	0.0006	0.0019	<0.0002	0.0006	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.004	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.19	0.2	-	-
QLD_0861_PFAS	SD019	01 Jun 2017	Normal	<0.0002	<0.0002	0.0009	<0.0002	0.0466	0.0016	<0.001	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0073	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0475	0.0568	0.0411	0.0055
QLD_0861_PFAS	SD019	01 Jun 2017	Normal	<0.0002	<0.0002	0.001	<0.0002	0.0339	0.0016	<0.001	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0058	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0349	0.0426	0.0308	0.0031
QLD_0861_PFAS	SD020	01 Jun 2017	Normal	<0.0002	<0.0002	0.0003	<0.0002	0.0092	0.0004	<0.001	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0004	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0095	0.0106	0.0084	0.0008
QLD_0861_PFAS	SD020	01 Jun 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0053	0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0053	0.0055	0.0049	0.0004
QLD_0861_PFAS	SD020	30 Apr 2019	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0032	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0032	0.0032	-	-
QLD_0861_PFAS	SD020	19 Nov 2019	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0021	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0021	0.0021	-	-
QLD_0861_PFASOMP	SD020	14 Apr 2020	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0012	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0012	0.0012	-	-
QLD_0861_PFASOMP	SD020	12 Oct 2020	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0015	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0015	0.0015	-	-
QLD_0861_PFASOMP	SD020	12 Oct 2020	Interlab_D	<0.001	<0.001	<0.001	<0.001	0.0057	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	-	-	-	-
QLD_0861_PFASOMP	SD020	12 Oct 2020	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	0.0033	<0.0003	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0033	0.0033	-	-
QLD_0861_PFASOMP	SD020	19 Oct 2021	Normal	<0.0010	<0.0010	<0.0010	<0.0010	0.0064	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	0.0064	0.0064	-	-
QLD_0861_PFASOMP	SD020	29 Mar 2022	Normal	<0.0002	<0.0002	0.0003	<0.0002	0.0034	0.0009	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002

				Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids										Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
				PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSA A	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
			Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			LOR	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0005	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0001	0.0002	0.0002
Project ID	**Location**	**Date**	**Type**																																
QLD_0861_PFAS	SD027	02 May 2019	Normal				0.005	<0.0010	0.0575	<0.0010	<0.001	<0.0010	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0010	<0.0010	<0.0025	0.0625	0.0635	-	-
QLD_0861_PFAS	SD027	02 May 2019	Interlab_D	<0.0002	0.0003	0.0049	0.0006	0.063	0.0026	0.0004	0.001	0.0012	<0.0002	0.0004	<0.001	<0.005	<0.005	<0.005	<0.05	<0.05	<0.0002	<0.0002	<0.0004	<0.0004	<0.01	<0.01	<0.002	<0.01	<0.01	<0.002	<0.05	0.068	0.074	-	-
QLD_0861_PFAS	SD027	02 May 2019	Field_D	<0.0028	<0.0012	0.0067	<0.0012	0.0847	<0.0012	<0.001	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0031	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0031	<0.0012	<0.0031	<0.0012	<0.0031	<0.0012	<0.0031	0.0914	0.0914	-	-
QLD_0861_PFASOMP	SD027	15 Apr 2020	Normal	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	<0.001	<0.0005	<0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	0.0005	0.0005	-	-
QLD_0861_PFASOMP	SD027	16 Oct 2020	Normal	<0.0005	<0.0005	0.0018	<0.0005	0.0168	<0.0005	<0.004	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0008	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	0.0186	0.02	-	-
QLD_0861_PFASOMP	SD027	30 Mar 2021	Normal	<0.0005	0.0005	0.0065	0.0006	0.0608	<0.0005	<0.002	0.0027	0.0031	0.0008	0.0018	<0.0005	0.0008	0.001	0.0016	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	0.0673	0.0802	-	-
QLD_0861_PFASOMP	SD027	26 Oct 2021	Normal	<0.0002	<0.0002	0.0008	<0.0002	0.0083	<0.0002	<0.001	0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	<0.0006	0.0091	0.0101	-	-
QLD_0861_PFASOMP	SD027	28 Mar 2022	Normal	0.0024	0.0036	0.049	0.0043	0.142	<0.0022	<0.005	0.002	0.0086	<0.0010	0.0035	<0.0010	<0.0010	<0.0010	<0.0030	<0.0010	<0.0024	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0024	<0.0010	<0.0024	<0.0024	<0.0010	<0.0024	<0.0024	0.191	0.215	-	-
QLD_0861_PFASOMP	SD027	21 Oct 2022	Normal	0.001	0.0016	0.021	0.0016	0.105	0.001	0.001	0.0017	0.007	0.0022	0.0027	0.0004	0.0015	0.0008	0.0018	0.0009	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.126	0.152	-	-
QLD_0861_PFASOMP_23	SD027	17 Apr 2023	Normal	<0.0002	<0.0002	0.0004	<0.0002	0.0047	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	0.0005	<0.0005	<0.0005	<0.0002	<0.0006	<0.0006	0.0051	0.0056	-	-
QLD_0861_PFAS	SD028	01 Jun 2017	Normal	0.0002	<0.0002	0.0041	0.0004	0.0257	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.0298	0.0307	0.0204	0.0052
QLD_0861_PFAS	SD028	01 Jun 2017	Normal	<0.0002	<0.0002	0.0011	<0.0002	0.0106	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.0117	0.0117	0.0091	0.0015
QLD_0861_PFAS	SD028	02 May 2019	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0021	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.0021	0.0021	-	-
QLD_0861_PFASOMP	SD028	14 Apr 2020	Normal	<0.0002	<0.0002	0.0007	<0.0002	0.0055	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.0062	0.0062	-	-
QLD_0861_PFASOMP	SD028	14 Apr 2020	Interlab_D	<0.001	<0.001	0.0012	<0.001	0.013	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	-	-	-	-
QLD_0861_PFASOMP	SD028	14 Apr 2020	Field_D	<0.0002	<0.0002	0.0008	<0.0002	0.0063	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.0071	0.0071	-	-
QLD_0861_PFASOMP	SD028	12 Oct 2020	Normal	<0.0005	<0.0005	0.0009	<0.0005	0.0076	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	0.0085	0.0085	-	-
QLD_0861_PFASOMP	SD028	12 Apr 2021	Normal	<0.0005	<0.0005	0.0036	<0.0005	0.118	0.0023	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0013	<0.0013	<0.0005	<0.0013	<0.0013	0.122	0.124	-	-
QLD_0861_PFASOMP	SD028	19 Oct 2021	Normal	<0.0002	<0.0002	0.0011	<0.0002	0.009	<0.0002	<0.001	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.0101	0.0106	-	-
QLD_0861_PFASOMP	SD028	19 Oct 2021	Interlab_D	<0.001	<0.001	0.0011	<0.001	0.012	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	-	-	-	-
QLD_0861_PFASOMP	SD028	19 Oct 2021	Field_D	<0.0002	<0.0002	0.0006	<0.0002	0.0054	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.006	0.006	-	-
QLD_0861_PFASOMP	SD028	29 Mar 2022	Normal	<0.0005	<0.0005	0.0016	<0.0005	0.0271	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	0.0287	0.0287	-	-
QLD_0861_PFASOMP	SD028	21 Oct 2022	Normal	0.0013	<0.0010	0.0147	0.0017	0.453	0.0104	<0.005	<0.0010	0.0013	<0.0010	<0.0010	<0.0010	<0.0010	0.0175	<0.0010	0.0044	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	0.0022	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	0.468	0.506	-	-
QLD_0861_PFASOMP_23	SD028	09 May 2023	Normal	<0.0002	<0.0002	0.0006	<0.0002	0.0124	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.013	0.013	-	-
QLD_0861_PFAS	SD029	01 Jun 2017	Normal	<0.0002	<0.0002	0.0004	<0.0002	0.0028	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.0032	0.0032	0.0024	0.0004
QLD_0861_PFAS	SD029	01 Jun 2017	Normal	<0.0002	<0.0002	0.0003	<0.0002	0.0027	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.003	0.003	0.0022	0.0004
QLD_0861_PFAS	SD030	13 Sep 2017	Normal	0.0008	0.0008	0.008	0.0006	0.039	0.0007	<0.001	0.0039	0.006	0.0019	0.0012	0.0003	0.0003	0.001	0.0019	<0.0002	<0.0005	<0.0005	0.0009	<0.0005	<0.0005	0.0004	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.047	0.0677	0.0286	0.0104
QLD_0861_PFAS	SD030	13 Sep 2017	Normal	<0.0002	<0.0002	0.0008	0.0004	0.111	0.0002	<0.001	<0.0002	0.0006	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.112	0.113	0.0906	0.0204
QLD_0861_PFAS	SD030	29 Apr 2019	Normal	0.0004	0.0006	0.0084	0.001	0.196	0.0003	0.003	0.0051	0.0024	0.0011	0.0017	0.0015	0.0027	0.0051	0.0042	0.0006	0.0006	<0.0005	0.0006	0.0016	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.204	0.237	-	-
QLD_0861_PFAS	SD030	29 Apr 2019	Interlab_D	0.0003	0.0004	0.0098	0.0019	0.38	0.001	0.0027	0.0054	0.0021	0.0011	0.002	0.0019	0.005	0.01	0.0093	0.001	<0.005	<0.001	<0.001	<0.001	<0.002	0.0003	0.0011	0.0012	<0.001	<0.001	<0.002	<0.001	<0.002	0.39	0.44	-	-
QLD_0861_PFAS	SD030	29 Apr 2019	Field_D	<0.0005	<0.0005	0.006	<0.0005	0.153	<0.0005	<0.001	0.0039	0.0016	<0.0005	0.0008	0.0005	0.0015	0.0031	0.0026	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	0.159	0.173	-	-
QLD_0861_PFASOMP	SD030	13 May 2019	Normal	<0.0002	<0.0002	0.0013	<0.0002	0.0466	<0.0002	<0.001	0.0008	0.0005	<0.0002	0.0003	0.0003	0.0004	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.0479	0.0502	-	-
QLD_0861_PFASOMP	SD030	15 Apr 2020	Normal	<0.0005	<0.0005	0.0037	<0.0005	0.0371	<0.0005	<0.001	0.0021	0.002	<0.0005	0.0005	<0.0005	0.0006	0.0005	<0.0005	<0.0005	<0.0012	<0.0005	0.0058	0.0033	0.0014	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	0.0408	0.057	-	-
QLD_0861_PFASOMP	SD030	16 Oct 2020	Normal	<0.0010	<0.0010	0.0035	<0.0010	0.044	<0.0010	<0.005	0.0011	0.0014	<0.0010	<0.0010	<0.0010	0.0016	0.0013	0.0016	<0.0010	<0.0025	<0.0010	0.0018	<0.0010	0.0013	<0.0010	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	0.0475	0.0576	-	-
QLD_0861_PFASOMP	SD030	30 Mar 2021	Normal	<0.0026	<0.0026	0.0076	<0.0026	0.106	<0.0026	<0.013	0.0057	0.0033	<0.0026	<0.0026	<0.0026	<0.0026	0.0038	0.0043	<0.0026	<0.0064	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0064	<0.0026	<0.0064	<0.0064	<0.0026	<0.0064	<0.0064	0.114	0.131	-	-
QLD_0861_PFASOMP	SD030	30 Mar 2021	Interlab_D	0.0011	<0.001	0.011	<0.001	0.13	<0.001	0.003	0.0054	0.0042	0.0016	0.0025	0.0031	0.0049	0.0062	0.011	0.0032	0.0028	<0.001	0.0028	0.0024	<0.002	<0.001	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	-	-	-	-
QLD_0861_PFASOMP	SD030	30 Mar 2021	Field_D	<0.0005	<0.0005	0.009	0.0009	0.134	<0.0005	0.003	0.0061	0.0039	0.0021	0.0023	0.0033	0.0038	0.0065	0.0076	0.0022	0.0016	<0.0005	0.0013	0.0012	0.001	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	0.143	0.19	-	-
QLD_0861_PFASOMP	SD030	26 Oct 2021	Normal	0.0014	0.001	0.0111	0.0014	0.132	0.0008	0.002	0.0036	0.0048	0.0007	0.002	0.0026	0.0034	0.005	0.0072	0.0043	0.002	<0.0005	0.0012	0.0008	0.0009	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	0.143	0.188	-	-
QLD_0861_PFASOMP	SD030	26 Oct 2021	Interlab_D	0.0011	0.0014	0.014	0.0013	0.16	<0.001	<0.002	0.005	0.0046	0.0013	0.0024	0.003	0.0033	0.0069	0.0058	0.0038	<0.002	<0.001	0.0024	0.0017	<0.002	<0.001	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	-	-	-	-
QLD_0861_PFASOMP	SD030	26 Oct 2021	Field_D	0.0015	0.001	0.0131	0.0016	0.187	0.0007	0.002	0.004	0.0046	0.0007	0.0025	0.004	0.0033	0.0049	0.0078	0.005	0.0019	<0.0005	0.0015	0.0008	0.0012	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	0.2	0.249	-	-
QLD_0861_PFASOMP	SD030	28 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD030	21 Oct 2022	Normal	0.0018	0.0022	0.0336	0.0058	0.296	0.0022	0.002	0.0048	0.007	0.0026	0.0035	0.0016	0.0026	0.0067	0.0126	0.0045	0.0022	<0.0005	0.0025	0.0014	0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	0.33	0.396	-	-
QLD_0861_PFASOMP_23	SD030	17 Apr 2023	Normal	<0.0002	<0.0002	0.0012	<0.0002	0.0089	<0.0002	<0.001	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.0101	0.0105	-	-
QLD_Hist_202012-3	SD031	02 Aug 2012	Normal	-	-	-	-	0.0163	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD031	02 Aug 2012	Normal	-	-	-	-	0.0137	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD031	10 Oct 2012	Normal	-	-	-	-	0.0529	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD031	10 Oct 2012	Normal	-	-	-	-	0.0293	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD031	18 Jan 2013	Normal	-	-	-	-	0.006	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD031	18 Jan 2013	Normal	-	-	-	-	0.0391	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD031	18 Jan 2013	Field_D	-	-	-	-	0.0083	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD031	20 Aug 2013	Normal	-	-	-	-	0.0097	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD031	20 Aug 2013	Normal	-	-	-	-	0.0096	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD031	02 Mar 2017	Normal	<0.0005	<0.0005	0.0013	<0.0005	0.0064	<0.0005	<0.001	0.0006	0.0008	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	0.0077	0.0091	-	-
QLD_Hist_202012-3	SD031	17 Oct 2017	Normal	<0.0002	<0.0002	0.0013	<0.0002	0.0271	0.0004	<0.001	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.0284	0.0292	-	-
QLD_0861_PFAS	SD033	14 Sep 2017	Normal	0.0003	0.0004	0.0045	0.001	0.242	0.0024	<0.001	0.0008	0.0035	0.0005	0.0023	0.0005	0.0003	0.0003	0.0003	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.001	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.246	0.261	0.176	0.066
QLD_0861_PFAS	SD033	14 Sep 2017	Normal	<0.0002	0.0002	0.0019	0.0002	0.0432	0.007	<0.001	0.0008	0.0028	0.0006	0.0009	0.0003	0.0004	0.002	0.0039	0.0015	<0.0005	<0.0005	<0.0005	0.0023	0.0038	0.004	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	0.0451	0.0758	0.0384	0.0048
QLD_0861_PFAS	SD033	03 May 2019	Normal	<0.0005	<0.0005	0.0058	<0.0005	0.274	0.0781	<0.001	0.0007	0.0029	<0.0005	0.0031	0.0016	0.0068	0.0273	0.0198	0.0074	0.0016	<0.0005	0.0006	0.0282	0.0091	0.033	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	0.28	0.5	-	-
QLD_0861_PFAS	SD033	03 May 2019	Normal	<0.0005	<0.0005	0.0069	<0.0005	0.411	0.0917	<0.001	0.001	0.0045	0.0005	0.0038	0.0016	0.0089	0.0529	0.0544	0.0202	0.0051	<0.0005	<0.0005	0.0472	0.0215	0.067	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	0.418	0.798	-	-
QLD_0861_PFASOMP	SD033	27 Apr 2020	Normal	0.0011	0.0014	0.0132	0.0014	0.211	0.0956	0.002	0.0022	0.0078	0.0021	0.006	0.0008	0.0019	0.0166	0.0788	0.0356	0.0169	<0.0005	<0.0005	0.0127	0.0273	0.0314	<0.0012	0.0006	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	0.224	0.566	-	-
QLD_0861_PFASOMP	SD033	16 Oct 2020	Normal	0.0021	0.0023	0.0154	<0.0010	0.0587	0.0063	0.008	0.0144	0.0093	0.0024	0.0038	<0.0010	<0.0010	0.0017	0.0045	0.002	<0.0025	<0.0010	<0.0010	0.0016	0.0011	0.0034	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025	0.0741	0.137	-	-
QLD_0861_PFASOMP	SD033	15 Apr 2021	Normal	0.0045	0.008	0.0884	0.0066	0.915	0.063	<0.005	0.0066	0.0237	0.0054	0.0195	0.0019	0.0014	0.0024	0.0045	0.0029	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	0.0179	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	1	1.17	-	-
QLD_0861_PFASOMP	SD033	26 Oct 2021	Normal	0.0011	0.0013	0.0132	0.0016	0.31	0.0213	<0.001	0.0016	0.0043	0.0006	0.003	0.0003	0.0003	0.0006	0.001	0.0005	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	0.0034	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	0.323	0.364	-	-
QLD_0861_PFASOMP	SD033	05 Apr 2022	Normal	0.0012	0.0021	0.0174	0.0012	0.176	0.0189	<0.001	0.0013	0.005	0.0008	0.003	<0.0002	<0.0002	0.0005	0.0006	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0038	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.193	0.232	-	-
QLD_0861_PFASOMP	SD033	25 Oct 2022	Normal	0.0005	0.0009	0.0138	0.0009	0.207	0.0145	<0.001	0.0012	0.0043	0.0006	0.0026	<0.0003	<0.0002	<0.0003	0.0006	<0.0002	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	0.0016	<0.0006	<0.0002	<0.0006	<0.0006	<0.0003	<0.0006	<0.0006	0.221	0.249	-	-
QLD_0861_PFASOMP	SD033	25 Oct 2022	Interlab_D	<0.001	<0.001	0.013	<0.001	0.21	0.006	<0.002	<0.002	0.0032	<0.001	0.0026	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	-	-	-	-
QLD_0861_PFASOM

				Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids										Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
				PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSA A	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
			Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			LOR	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0005	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0001	0.0002	0.0002
Project ID	**Location**	**Date**	**Type**																															
QLD_0861_PFASOMP	SD039	22 Oct 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD039	22 Oct 2021	Interlab_D	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	-	-	-	-
QLD_0861_PFASOMP	SD039	22 Oct 2021	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	0.0014	<0.0002	<0.001	0.0003	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0014	0.0019	-	-
QLD_0861_PFASOMP	SD039	28 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD039	20 Oct 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0010	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP_23	SD039	26 Apr 2023	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD040	02 Jun 2017	Normal	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	0.0003	<0.0002	<0.0002
QLD_0861_PFAS	SD040	06 May 2019	Normal	<0.0002	<0.0002	0.0002	<0.0002	0.0025	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0003	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0027	0.0027	-	-
QLD_0861_PFAS	SD040	20 Nov 2019	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0009	0.0009	-	-
QLD_0861_PFASOMP	SD040	15 Apr 2020	Normal	<0.0002	<0.0002	0.0003	<0.0002	0.0044	<0.0002	<0.001	0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0047	0.0051	-	-
QLD_0861_PFASOMP	SD040	15 Oct 2020	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0015	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0015	0.0015	-	-
QLD_0861_PFASOMP	SD040	15 Apr 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0009	0.0009	-	-
QLD_0861_PFASOMP	SD040	19 Oct 2021	Normal	<0.0002	<0.0002	0.0004	<0.0002	0.0035	<0.0034	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	0.0039	0.0039	-	-
QLD_0861_PFASOMP	SD040	28 Mar 2022	Normal	<0.0002	<0.0002	0.0002	<0.0002	0.0016	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0018	0.0018	-	-
QLD_0861_PFASOMP	SD040	20 Oct 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0034	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP_23	SD040	18 Apr 2023	Normal	<0.0002	<0.0002	0.0003	<0.0002	0.0032	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0035	0.0035	-	-
QLD_0861_PFAS	SD041	17 Oct 2017	Normal	0.0014	0.0011	0.0107	0.001	0.0873	<0.0002	<0.001	0.0011	0.004	0.0005	0.0007	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.098	0.108	0.072	0.0153
QLD_0861_PFAS	SD041	08 May 2019	Normal	0.0074	0.0082	0.0699	0.0079	0.391	0.0038	0.001	0.0026	0.0133	0.002	0.005	0.0003	0.0006	0.0009	0.0022	0.0008	0.0009	<0.0005	<0.0005	0.0026	0.001	0.005	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	0.461	0.526	-	-
QLD_0861_PFAS	SD041	08 May 2019	Interlab_D	0.011	0.0097	0.13	0.01	0.85	0.0079	<0.004	0.0043	0.018	0.0029	0.008	<0.002	<0.01	<0.01	<0.01	<0.01	<0.1	<0.002	<0.002	0.0051	<0.002	<0.02	<0.02	<0.004	<0.02	<0.02	<0.004	<0.1	0.98	1.1	-	-
QLD_0861_PFAS	SD041	08 May 2019	Field_D	0.0134	0.014	0.134	0.0156	0.7	0.007	0.002	0.0047	0.0247	0.0036	0.0093	0.0007	0.0012	0.0022	0.0042	0.0014	0.0018	<0.0005	<0.0005	0.0055	0.0015	0.008	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	0.834	0.955	-	-
QLD_0861_PFAS	SD041	19 Nov 2019	Normal	0.0133	0.0134	0.103	0.012	0.366	0.0054	0.003	0.006	0.0249	0.0037	0.0073	0.0004	0.0008	0.0013	0.0031	0.0011	0.001	<0.0005	0.0014	0.0026	0.0007	0.0026	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.469	0.573	-	-
QLD_0861_PFASOMP	SD041	15 Apr 2020	Normal	0.0426	0.0477	0.363	0.0338	1.08	<0.0025	<0.002	0.0134	0.076	0.0083	0.0366	<0.0025	<0.0025	0.0046	0.0028	<0.0025	<0.0063	<0.0025	<0.0025	0.0246	<0.0025	0.0079	<0.0063	<0.0025	<0.0063	<0.0063	<0.0025	<0.0063	1.44	1.74	-	-
QLD_0861_PFASOMP	SD041	15 Oct 2020	Normal	0.0307	0.042	0.375	0.0412	1.08	0.0081	<0.025	0.0162	0.0574	0.0113	0.0259	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0126	<0.0050	<0.0050	<0.0050	<0.0050	0.0121	<0.0126	<0.0050	<0.0126	<0.0126	<0.0050	<0.0126	1.46	1.7	-	-
QLD_0861_PFASOMP	SD041	30 Mar 2021	Normal	0.004	0.0049	0.0584	0.0086	0.655	0.0193	<0.006	0.0058	0.0088	0.0026	0.0105	<0.0013	<0.0013	<0.0013	0.0079	0.014	0.0039	<0.0013	<0.0013	0.004	0.0021	0.004	<0.0031	<0.0013	<0.0031	<0.0031	<0.0013	<0.0031	0.713	0.812	-	-
QLD_0861_PFASOMP	SD041	26 Oct 2021	Normal	0.0007	0.001	0.0149	0.0027	0.178	0.0016	<0.001	<0.0002	0.0008	0.0024	0.0004	0.0013	<0.0003	<0.0002	0.0006	0.0005	<0.0002	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	0.0007	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	0.193	0.206	-	-
QLD_0861_PFASOMP	SD041	28 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.001	0.0012	-	-
QLD_0861_PFASOMP	SD041	20 Oct 2022	Normal	0.0023	0.0122	0.0746	0.0061	0.291	0.005	<0.001	0.0006	0.0057	0.0012	0.0027	<0.0002	<0.0002	0.001	0.0024	0.0003	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	0.0013	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	0.366	0.406	-	-
QLD_0861_PFASOMP	SD041	20 Oct 2022	Interlab_D	<0.005	0.0097	0.1	0.0078	0.57	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	-
QLD_0861_PFASOMP	SD041	20 Oct 2022	Field_D	0.0021	0.0045	0.0306	0.0037	0.23	0.0044	<0.001	<0.0006	0.0037	<0.0006	0.0018	<0.0002	<0.0002	0.001	0.0025	<0.0002	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	0.0017	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	0.261	0.286	-	-
QLD_0861_PFASOMP_23	SD041	18 Apr 2023	Normal	0.0098	0.0217	0.18	0.0296	1.62	0.0128	<0.024	<0.0049	0.0168	<0.0049	0.0177	<0.0049	<0.0049	<0.0049	0.0054	<0.0049	<0.0122	<0.0049	<0.0049	<0.0049	<0.0049	0.0054	<0.0122	<0.0049	<0.0122	<0.0122	<0.0049	<0.0122	1.8	1.92	-	-
QLD_0861_PFAS	SD042	02 Jun 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0076	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0076	0.0076	0.0054	0.0022
QLD_0861_PFAS	SD043	05 Jun 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0002	0.0002	<0.0002	0.0002
QLD_0861_PFAS	SD043	05 Jun 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
QLD_0861_PFAS	SD043	19 Nov 2019	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0003	0.0003	-	-
QLD_0861_PFASOMP	SD043	28 Apr 2020	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD043	15 Oct 2020	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	-	-
QLD_0861_PFASOMP	SD043	15 Apr 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD043	22 Oct 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD043	04 Apr 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD043	20 Oct 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP_23	SD043	19 Apr 2023	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD044	01 Mar 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0036	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0003	0.0039	0.0002	<0.0002
QLD_0861_PFAS	SD044	01 Mar 2018	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0037	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	0.0037	<0.0002	<0.0002
QLD_0861_PFAS	SD045	02 Jun 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0028	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0028	0.0028	0.0024	0.0004
QLD_0861_PFAS	SD045	06 May 2019	Normal	<0.0002	<0.0002	0.0004	<0.0002	0.0033	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0037	0.0037	-	-
QLD_0861_PFAS	SD045	20 Nov 2019	Normal	<0.0002	<0.0002	0.0007	<0.0002	0.0017	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0024	0.0024	-	-
QLD_0861_PFAS	SD045	20 Nov 2019	Interlab_D	<0.001	<0.001	0.0002	<0.001	0.0046	<0.0002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.005	<0.001	<0.002	0.0049	0.0049	-	-
QLD_0861_PFAS	SD045	20 Nov 2019	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	0.0016	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0016	0.0016	-	-
QLD_0861_PFASOMP	SD045	15 Apr 2020	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	-	-
QLD_0861_PFASOMP	SD045	15 Oct 2020	Normal	<0.0005	<0.0005	<0.0005	<0.0005	0.0027	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0027	0.0027	-	-
QLD_0861_PFASOMP	SD045	15 Apr 2021	Normal	<0.0002	<0.0002	0.0003	<0.0002	0.0031	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0034	0.0034	-	-
QLD_0861_PFASOMP	SD045	19 Oct 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0028	<0.0002	<0.001	0.0002	0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0028	0.0034	-	-
QLD_0861_PFASOMP	SD045	29 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0026	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0026	0.0026	-	-
QLD_0861_PFASOMP	SD045	20 Oct 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0040	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP_23	SD045	18 Apr 2023	Normal	<0.0002	<0.0002	0.0002	<0.0002	0.0013	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	0.0084	0.01	-	-
QLD_0861_PFAS	SD046	05 Jun 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
QLD_0861_PFAS	SD046	05 Jun 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0002	0.0002	<0.0002	0.0002
QLD_0861_PFAS	SD047	02 Jun 2017	Normal	<0.0002	<0.0002	0.0008	<0.0002	0.0052	<0.0002	<0.001	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.006	0.0062	0.0042	0.001
QLD_0861_PFAS	SD047	02 Jun 2017	Normal	<0.0002	<0.0002	0.0023	<0.0002	0.0031	<0.0002	<0.001	0.0002	0.0006	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0054	0.0066	0.0024	0.0007
QLD_0861_PFAS	SD047	01 May 2019	Normal	<0.0002	0.0003	0.0034	0.0003	0.039	<0.0002	<0.001	0.0006	0.001	0.0003	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0424	0.0454	-	-
QLD_0861_PFAS	SD047	21 Nov 2019	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005

				Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids										Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
				PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSA A	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
			Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			LOR	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0005	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0001	0.0002	0.0002
Project ID	**Location**	**Date**	**Type**																															
QLD_0861_PFAS	SD052	30 May 2017	Field_D	<0.0002	<0.0002	<0.0002	0.0004	0.0002	<0.0002	0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0002	0.0016	<0.0002	0.0002
QLD_0861_PFAS	SD052	10 May 2019	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD052	21 Nov 2019	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD052	20 Apr 2020	Normal	<0.0005	<0.0005	<0.0005	<0.0005	0.0011	<0.0005	<0.002	<0.0005	<0.0005	<0.0011	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0011	0.0011	-	-
QLD_0861_PFASOMP	SD052	13 Oct 2020	Normal	<0.0010	<0.0010	<0.0010	<0.0010	<0.0030	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0010	<0.0010	-	-
QLD_0861_PFASOMP	SD052	13 Apr 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0002	0.0002	-	-
QLD_0861_PFASOMP	SD052	20 Oct 2021	Normal	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.006	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0031	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0031	<0.0012	<0.0031	<0.0031	<0.0012	<0.0031	<0.0012	<0.0012	-	-
QLD_0861_PFASOMP	SD052	31 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	0.0004	<0.0005	<0.0005	<0.0002	<0.0005	0.0005	0.0013	-	-
QLD_0861_PFASOMP	SD052	19 Oct 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP_23	SD052	26 Apr 2023	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0015	<0.0002	<0.001	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	0.0015	0.002	-	-
QLD_0861_PFAS	SD053	17 Oct 2017	Normal	0.0004	0.0005	0.0095	0.001	0.0308	<0.0002	<0.001	<0.0002	0.0036	0.0006	0.0007	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0403	0.0471	0.0211	0.0097
QLD_0861_PFAS	SD053	17 Oct 2017	Normal	<0.0002	<0.0002	0.0005	<0.0002	0.0058	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0063	0.0063	0.0048	0.001
QLD_0861_PFAS	SD053	03 Dec 2019	Normal	<0.0002	<0.0002	0.0003	<0.0002	0.0017	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.002	0.002	-	-
QLD_0861_PFASOMP	SD053	21 Apr 2020	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0024	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0024	0.0024	-	-
QLD_0861_PFASOMP	SD053	21 Oct 2020	Normal	<0.0002	<0.0002	0.0004	<0.0002	0.002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0024	0.0024	-	-
QLD_0861_PFASOMP	SD053	19 Apr 2021	Normal	<0.0002	<0.0002	0.0012	<0.0002	0.0077	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0089	0.0089	-	-
QLD_0861_PFASOMP	SD053	25 Oct 2021	Normal	<0.0002	<0.0002	0.0007	<0.0002	0.035	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	0.0357	0.0357	-	-
QLD_0861_PFASOMP	SD053	06 Apr 2022	Normal	<0.0002	<0.0002	0.0004	<0.0002	0.002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0024	0.0024	-	-
QLD_0861_PFASOMP	SD053	24 Oct 2022	Normal	<0.0002	<0.0002	0.0013	<0.0002	0.0091	<0.0002	<0.001	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0104	0.0111	-	-
QLD_0861_PFASOMP_23	SD053	21 Apr 2023	Normal	<0.0002	0.0003	0.0023	0.0003	0.0219	<0.0002	<0.001	<0.0002	0.0003	<0.0002	0.0003	<0.0002	0.0002	<0.0002	0.0003	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0242	0.0262	-	-
QLD_0861_PFAS	SD054	17 Oct 2017	Normal	<0.0002	<0.0002	0.0015	0.0002	0.0191	<0.0002	<0.001	<0.0002	0.0004	<0.0002	0.0004	<0.0002	0.0002	0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0003	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0206	0.0223	0.015	0.0041
QLD_0861_PFAS	SD054	17 Oct 2017	Normal	<0.0002	<0.0002	0.001	<0.0002	0.001	<0.0002	<0.001	<0.0002	0.0007	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.002	0.0029	0.0005	0.0005
QLD_0861_PFAS	SD056	13 Sep 2017	Normal	0.0003	0.0002	0.005	0.0008	0.374	0.0014	<0.001	<0.0002	0.0009	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	0.0002	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0021	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.379	0.386	0.33	0.044
QLD_0861_PFASOMP	SD056	13 Sep 2017	Normal	0.0003	0.0004	0.0077	0.0019	1.13	0.0015	<0.001	<0.0002	0.0018	0.0002	0.0009	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0014	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	1.14	1.15	0.994	0.136
QLD_0861_PFAS	SD056	13 Sep 2017	Interlab_D	0.0004	0.0005	0.0052	0.0007	0.35	0.001	<0.0002	<0.0002	0.0007	<0.0001	0.0005	<0.0001	<0.0005	<0.0001	0.001	0.0005	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	0.003	<0.001	<0.0002	<0.001	<0.001	<0.0002	<0.005	-	-	-	-
QLD_0861_PFAS	SD056	13 Sep 2017	Field_D	0.0022	0.0022	0.0237	0.003	0.345	0.0052	<0.001	<0.0002	0.0041	0.0006	0.0015	<0.0002	0.0005	0.0021	0.0024	0.0004	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	0.0137	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	0.369	0.407	0.286	0.059
QLD_0861_PFAS	SD056	01 May 2019	Normal	0.001	0.001	0.0141	0.0016	0.374	0.0016	<0.001	0.0013	0.0031	0.0007	0.0017	0.0004	0.0015	0.0019	0.0037	0.0004	0.001	<0.0005	0.0005	<0.0005	<0.0005	0.0029	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.388	0.412	-	-
QLD_0861_PFAS	SD056	01 May 2019	Normal	0.0008	0.0012	0.0141	0.0014	0.322	0.002	<0.001	0.001	0.0026	0.0007	0.0018	0.0005	0.001	0.0007	0.0009	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0022	<0.0005	<0.0002	<0.0005	<0.0005	<0.0003	<0.0005	0.336	0.353	-	-
QLD_0861_PFAS	SD056	18 Nov 2019	Normal	0.0004	0.0004	0.0038	0.0003	0.0332	<0.0002	<0.001	0.0005	0.001	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.037	0.0404	-	-
QLD_0861_PFASOMP	SD056	18 Nov 2019	Normal	0.0004	0.0003	0.0035	0.0002	0.032	0.0002	<0.001	0.0004	0.0009	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0009	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0355	0.0388	-	-
QLD_0861_PFASOMP	SD056	18 Nov 2019	Interlab_D	0.0004	0.0005	0.0068	0.0006	0.086	0.002	0.0002	0.0004	0.0012	0.0002	0.0004	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.006	<0.0001	<0.0001	<0.0001	<0.0001	0.003	<0.001	<0.0002	<0.001	<0.001	<0.0002	<0.006	0.092	0.1	-	-
QLD_0861_PFAS	SD056	18 Nov 2019	Field_D	0.0004	0.0003	0.0032	0.0002	0.0289	<0.0002	<0.001	0.0004	0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.001	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0321	0.0356	-	-
QLD_0861_PFASOMP	SD056	15 Apr 2020	Normal	<0.0010	0.001	0.0131	<0.0010	0.0676	<0.0010	<0.001	0.0018	0.0038	0.0017	0.002	0.001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0060	<0.0010	<0.0025	0.0807	0.092	-	-
QLD_0861_PFASOMP	SD056	15 Apr 2020	Interlab_D	0.0014	0.001	0.013	<0.001	0.21	<0.001	<0.002	<0.002	0.0032	0.0012	0.0024	0.0011	0.002	<0.002	0.003	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002	0.0018	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	-	-	-	-
QLD_0861_PFASOMP	SD056	15 Apr 2020	Field_D	<0.0010	0.001	0.0154	0.0013	0.0973	<0.0010	<0.001	0.0013	0.0039	0.0016	0.0027	<0.0010	0.0012	0.0016	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	0.113	0.127	-	-
QLD_0861_PFASOMP	SD056	19 Oct 2020	Normal	0.0012	0.0011	0.0126	0.0013	0.13	0.0015	<0.001	0.0009	0.0022	0.0004	0.001	0.0002	0.0004	0.0008	0.0014	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0115	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.143	0.167	-	-
QLD_0861_PFASOMP	SD056	30 Mar 2021	Normal	<0.0010	0.0014	0.0302	0.0091	0.611	<0.0010	<0.005	0.0041	0.0058	0.0035	0.0068	0.0036	0.0031	0.0018	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	0.641	0.68	-	-
QLD_0861_PFASOMP	SD056	26 Oct 2021	Normal	<0.0010	<0.0010	0.0083	0.0012	0.629	0.003	<0.005	0.0014	0.0021	<0.0010	0.0012	<0.0010	<0.0010	0.0012	0.0015	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	0.637	0.649	-	-
QLD_0861_PFASOMP	SD056	28 Mar 2022	Normal	0.0028	0.0029	0.108	0.0604	1.82	0.0038	<0.002	0.0036	0.008	0.0023	0.0155	0.0027	0.0014	0.0021	0.0019	0.0006	<0.0012	<0.0005	<0.0005	<0.0005	0.0006	0.0019	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	1.93	2.04	-	-
QLD_0861_PFASOMP	SD056	21 Oct 2022	Normal	0.0123	0.0327	0.418	<0.0042	0.33	<0.0032	<0.004	0.0144	0.0605	0.0278	0.0191	0.0017	0.0016	0.0016	<0.0008	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.748	0.92	-	-
QLD_0861_PFASOMP	SD056	21 Oct 2022	Interlab_D	0.0067	0.017	0.34	0.0016	0.21	<0.001	0.0041	0.0085	0.031	0.017	0.012	0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	-	-	-	-
QLD_0861_PFASOMP	SD056	21 Oct 2022	Field_D	0.0161	0.0291	0.426	0.0049	0.372	0.0044	0.007	0.0158	0.0638	0.0292	0.0246	0.0022	0.0028	0.0025	0.0024	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0003	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.798	1	-	-
QLD_0861_PFASOMP_23	SD056	18 Apr 2023	Normal	0.0015	0.0016	0.0188	0.0023	0.168	0.003	<0.001	0.0021	0.0036	0.0012	0.0023	0.0004	0.0006	0.0025	0.0042	0.0009	0.0007	<0.0005	<0.0005	<0.0005	<0.0005	0.0069	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.187	0.221	-	-
QLD_0861_PFAS	SD058	13 Sep 2017	Normal	0.0007	0.0006	0.0052	0.0005	0.0381	0.0005	<0.001	0.0009	0.0024	0.0004	0.0009	0.0002	0.0005	0.0003	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0433	0.0512	0.0304	0.0077
QLD_0861_PFAS	SD058	13 Sep 2017	Normal	<0.0002	<0.0002	0.0004	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0014	0.0014	0.0007	0.0003
QLD_0861_PFAS	SD059	13 Sep 2017	Normal	<0.0002	<0.0002	0.001	<0.0002	0.008	<0.0002	<0.001	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.009	0.0094	0.0064	0.0016
QLD_0861_PFAS	SD059	13 Sep 2017	Normal	<0.0002	<0.0002	0.0008	<0.0002	0.0011	<0.0002	<0.001	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0019	0.0023	0.0007	0.0004
QLD_0861_PFAS	SD059	29 Apr 2019	Normal	0.0008	0.001	0.0078	0.0007	0.0738	<0.0002	<0.001	<0.0002	0.0008	0.0026	0.0005	0.0017	0.0003	0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0816	0.0902	-	-
QLD_0861_PFASOMP	SD059	15 Apr 2020	Normal	0.0018	0.0013	0.0086	<0.0005	0.0336	<0.0005	<0.001	0.0018	0.0043	0.0007	0.0016	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.0422	0.0537	-	-
QLD_0861_PFASOMP	SD059	16 Oct 2020	Normal	0.0033	0.0038	0.0236	0.0021	0.132	0.003	<0.002	0.0033	0.0085	0.0021	0.0044	0.0008	0.001	0.0011	0.0011	<0.0002	<0.0005	<0.0005	0.0009	0.0008	<0.0005	0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.156	0.192	-	-
QLD_0861_PFASOMP	SD059	30 Mar 2021	Normal	0.0022	0.002	0.0199	0.0024	0.244	0.0013	<0.002	0.0036	0.0059	0.002	0.0046	0.0012	0.0014	0.0014	0.0008	<0.0005	<0.0012	<0.0005	0.0008	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	0.264	0.294	-	-
QLD_0861_PFASOMP	SD059	26 Oct 2021	Normal	0.0011	0.0013	0.0145	0.0018	0.106	0.007	<0.001	0.0029	0.0037	0.0011	0.0033	0.0009	0.0006	0.001	0.0007	<0.0002	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	0.0009	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	0.12	0.147	-	-
QLD_0861_PFASOMP	SD059	28 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD059	21 Oct 2022	Normal	0.0064	0.0067	0.0751	0.011	1.02	0.0299	0.005	<0.0008	0.0178	0.0059	0.0156	0.0043	0.0048	0.0068	0.0059	0.001	<0.0012	<0.0005	<0.0010	<0.0005	<0.0005	0.0014	<0.0012	<0.0005	<0.0012	<0.0012	<0.0003	<0.0012	1.1	1.22	-	-
QLD_0861_PFASOMP_23	SD059	17 Apr 2023	Normal	0.0002	0.0002	0.0015	<0.0002	0.0091	<0.0002	<0.001	0.0005	0.0008	0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0106	0.0128	-	-
QLD_0861_PFASOMP_23	SD059	17 Apr 2023	Interlab_D	<0.001	<0.001	0.004	<0.001	0.035	<0.001	<0.002	<0.002	0.0017	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	-	-	-	-
QLD_0861_PFASOMP_23	SD059	17 Apr 2023	Field_D	0.0006	0.0004	0.0046	0.0004	0.0365	0.0011	<0.001	0.0009	0.0013	0.0004	0.0007	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0411	0.0474	-	-
QLD_0861_PFAS	SD061	13 Sep 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0004	0.0004	0.0003	<0.0002
QLD_0861_PFAS	SD061	13 Sep 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
QLD_0861_PFAS	SD064	19 Oct 2017	Normal	0.001	0.001	0.0087	0.0008	0.0334	0.0004	<0.001	0.0006	0.0021	0.0003	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0421	0.0488	0.0279	0.0055
QLD_0861_PFAS	SD064	19 Oct 2017	Normal	0.0012	0.0011	0.0133	0.0016	0.107	0.0003	<0.001	0.0007	0.0034	0.0005	0.0014	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0

				Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids										Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
				PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSA A	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
			Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			LOR	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0005	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0001	0.0002	0.0002
Project ID	**Location**	**Date**	**Type**																																
QLD_0861_PFAS	SD082	01 Jun 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
QLD_0861_PFAS	SD083	30 May 2017	Normal	<0.0002	<0.0002	<0.0002	0.0007	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0007	<0.0002	<0.0002
QLD_0861_PFAS	SD083	30 May 2017	Normal	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0006	<0.0002	<0.0002
QLD_0861_PFAS	SD083	14 Sep 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0004	0.0004	0.0002	0.0002
QLD_0861_PFAS	SD084	02 Jun 2017	Normal	<0.0002	<0.0002	0.0008	<0.0002	0.0042	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.005	0.005	0.0035	0.0007
QLD_0861_PFAS	SD084	02 Jun 2017	Normal	<0.0002	<0.0002	0.0016	<0.0002	0.0066	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0082	0.0082	0.0052	0.0014
QLD_0861_PFAS	SD085	07 Mar 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0022	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0022	0.0022	0.0022	<0.0002
QLD_0861_PFAS	SD086	02 Jun 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0013	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0013	0.0018	0.0006	0.0007
QLD_0861_PFAS	SD088	15 Sep 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
QLD_0861_PFAS	SD088	15 Sep 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0004	0.0004	0.0003	<0.0002
QLD_0861_PFASOMP	SD088	20 Apr 2020	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0026	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0010	-	-
QLD_0861_PFASOMP	SD088	13 Oct 2020	Normal	<0.0010	<0.0010	<0.0010	<0.0010	<0.0014	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	-	-
QLD_0861_PFASOMP	SD088	13 Oct 2020	Interlab_D	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.02	<0.002	<0.001	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	-	-	-	-	-
QLD_0861_PFASOMP	SD088	13 Oct 2020	Field_D	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.007	<0.0014	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	-	-
QLD_0861_PFASOMP	SD088	13 Apr 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD088	20 Oct 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0003	0.0003	-	-
QLD_0861_PFASOMP	SD088	31 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD088	31 Mar 2022	Interlab_D	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.005	<0.002	<0.002	<0.005	-	-	-	-	-
QLD_0861_PFASOMP	SD088	31 Mar 2022	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD088	19 Oct 2022	Normal	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050	<0.0020	<0.0050	<0.0050	<0.0020	<0.0050	<0.0020	<0.0020	<0.0020	-	-
QLD_0861_PFASOMP_23	SD088	22 May 2023	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0006	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD089	14 Sep 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
QLD_0861_PFAS	SD089	14 Sep 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
QLD_0861_PFAS	SD089	10 May 2019	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD089	20 Apr 2020	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0014	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	-	-
QLD_0861_PFASOMP	SD089	13 Oct 2020	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0030	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	-	-
QLD_0861_PFASOMP	SD089	13 Apr 2021	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	-	-
QLD_0861_PFASOMP	SD089	20 Oct 2021	Normal	<0.0010	<0.0010	<0.0010	<0.0010	<0.0018	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0024	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0024	<0.0010	<0.0024	<0.0024	<0.0010	<0.0024	<0.0010	<0.0010	<0.0010	-	-
QLD_0861_PFASOMP	SD089	31 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0002	0.0002	-	-
QLD_0861_PFASOMP	SD089	19 Oct 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP_23	SD089	22 May 2023	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0016	<0.0042	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD090	14 Sep 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
QLD_0861_PFAS	SD090	14 Sep 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
QLD_0861_PFAS	SD090	10 May 2019	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD090	10 May 2019	Interlab_D	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0004	<0.0004	<0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.002	<0.002	<0.005	<0.005	<0.01	<0.0002	<0.0002	<0.0002	<0.0002	<0.005	<0.005	<0.002	<0.005	<0.005	<0.002	<0.01	0.0002	0.0002	-	-
QLD_0861_PFAS	SD090	10 May 2019	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD090	20 Apr 2020	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0016	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	-	-
QLD_0861_PFASOMP	SD090	13 Oct 2020	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0009	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0013	<0.0013	<0.0005	<0.0013	<0.0005	<0.0005	<0.0005	-	-
QLD_0861_PFASOMP	SD090	14 Apr 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0008	0.0008	-	-
QLD_0861_PFASOMP	SD090	21 Oct 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD090	31 Mar 2022	Normal	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0010	<0.0025	<0.0025	<0.0010	<0.0025	<0.0010	<0.0010	<0.0010	-	-
QLD_0861_PFASOMP	SD090	21 Oct 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0015	0.0018	-	-
QLD_0861_PFASOMP_23	SD090	22 May 2023	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0040	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP_23	SD090	22 May 2023	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	<0.0014	<0.0006	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD091	14 Sep 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
QLD_0861_PFAS	SD091	14 Sep 2017	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
QLD_0861_PFAS	SD091	10 May 2019	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD091	20 Apr 2020	Normal	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	-	-
QLD_0861_PFASOMP	SD091	13 Oct 2020	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD091	14 Apr 2021	Normal	<0.0005	<0.0005	<0.0005	<0.0005	0.0016	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	0.0016	0.0016	-	-
QLD_0861_PFASOMP	SD091	21 Oct 2021	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0016	<0.0004	<0.001	<0.0002	<0.0002	<0.0004	<0.0002	<0.0002	<0.0002	<0.0012	<0.0002	<0.0002	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD091	31 Mar 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFASOMP	SD091	21 Oct 2022	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.001	0.0013	-	-
QLD_0861_PFASOMP_23	SD091	22 May 2023	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0018	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD093	15 Sep 2017	Normal	<0.0002	0.0003	0.0006	0.0008	0.0061	<0.0002	<0.001	0.0002	0.0002	<0.0002	<0.0002	0.0003	0.0004	0.0003	0.0004	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0065	0.0069	-	-
QLD_0861_PFAS	SD093	15 Sep 2017	Normal	<0.0002	0.0003	0.0025	0.0004	0.0183	<0.0002	<0.001	0.0005	0.0015	0.0006	0.001	0.0006	<0.0002	0.0014	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0036	0.004	-	-
QLD_0861_PFAS	SD094	15 Sep 2017	Normal	0.0004	0.0007	0.0115	0.0037	0.146	0.0021	<0.001	<0.0002	0.0023	0.0008	0.0022	0.0027	0.001	0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0003	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.158	0.174	0.091	0.055
QLD_0861_PFAS	SD094	15 Sep 2017	Normal	0.0004	0.0004	0.0041	0.0009	0.038	0.0053	<0.001	<0.0002	0.0011	0.0004	0.0006	0.0009	<0.0002	0.0014	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0004	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0421	0.0539	0.0311	0.0069
QLD_0861_PFASOMP	SD094	15 Apr 2020	Normal	<0.0005	<0.0005	0.0011	<0.0005	0.0106	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.

				Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids										Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
				PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
			Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			LOR	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0005	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0001	0.0002	0.0002
Project ID	**Location**	**Date**	**Type**																															
QLD_0861_PFAS	SD116	18 Jan 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0015	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0015	0.0015	<0.0002	0.0015
QLD_0861_PFAS	SD117	18 Jan 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0011	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0011	0.0011	<0.0002	0.0011
QLD_0861_PFAS	SD118	19 Jan 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0005	0.0005	<0.0002	0.0005
QLD_0861_PFAS	SD119	07 Feb 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0003	0.0003	-	-
QLD_0861_PFAS	SD120	19 Jan 2018	Normal	<0.0002	<0.0002	0.0038	0.0004	0.0068	<0.0002	<0.001	<0.0002	0.001	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0106	0.0124	0.0004	0.0064
QLD_0861_PFAS	SD121	31 May 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD122	31 May 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD122	31 May 2018	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD123	01 Jun 2018	Normal	<0.0002	<0.0002	0.0003	<0.0002	0.0013	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0016	0.0016	-	-
QLD_0861_PFAS	SD124	01 Jun 2018	Normal	<0.0002	<0.0002	0.0006	<0.0002	0.0028	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0034	0.0034	-	-
QLD_0861_PFAS	SD124	01 Jun 2018	Interlab_D	<0.0001	<0.0001	0.0006	<0.0001	0.0051	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0005	<0.002	<0.002	<0.002	<0.002	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.005	<0.005	<0.001	<0.001	<0.005	<0.001	<0.005	-	-	-	-
QLD_0861_PFAS	SD124	01 Jun 2018	Field_D	<0.0002	<0.0002	0.0003	<0.0002	0.0024	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0027	0.0027	-	-
QLD_0861_PFAS	SD125	01 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0004	0.0004	-	-
QLD_0861_PFAS	SD126	01 Jun 2018	Normal	<0.0002	<0.0002	0.0002	<0.0002	0.0015	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0017	0.0017	-	-
QLD_0861_PFAS	SD127	02 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD128	02 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0057	0.0057	-	-
QLD_0861_PFAS	SD129	02 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0014	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0014	0.0014	-	-
QLD_0861_PFAS	SD130	04 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD131	05 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0006	0.0006	-	-
QLD_0861_PFAS	SD132	05 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0016	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0016	0.0016	-	-
QLD_0861_PFAS	SD133	05 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0008	0.0008	-	-
QLD_0861_PFAS	SD134	06 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0003	0.0003	-	-
QLD_0861_PFAS	SD135	06 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0007	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0007	0.0007	-	-
QLD_0861_PFAS	SD136	05 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0003	0.0003	-	-
QLD_0861_PFAS	SD137	05 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0005	0.0005	-	-
QLD_0861_PFAS	SD138	05 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD139	05 Jun 2018	Normal	<0.0002	<0.0002	0.0004	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0012	0.0012	-	-
QLD_0861_PFAS	SD140	09 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0002	0.0002	-	-
QLD_0861_PFAS	SD141	09 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0006	0.0006	-	-
QLD_0861_PFAS	SD141	09 Jun 2018	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0005	0.0005	-	-
QLD_0861_PFAS	SD141	09 Jun 2018	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0002	0.0002	-	-
QLD_0861_PFAS	SD142	09 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0004	0.0004	-	-
QLD_0861_PFAS	SD143	09 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0004	0.0006	-	-
QLD_0861_PFAS	SD144	09 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	0.0004	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0005	0.0009	-	-
QLD_0861_PFAS	SD145	09 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	0.0003	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0008	0.0011	-	-
QLD_0861_PFAS	SD146	11 Jun 2018	Normal	<0.0002	<0.0002	0.0003	<0.0002	0.0016	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0019	0.0019	-	-
QLD_0861_PFAS	SD147	11 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.001	0.001	-	-
QLD_0861_PFAS	SD148	11 Jun 2018	Normal	<0.0002	<0.0002	0.0003	<0.0002	0.0027	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.003	0.003	-	-
QLD_0861_PFAS	SD149	13 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0004	0.0004	-	-
QLD_0861_PFAS	SD150	14 Jun 2018	Normal	<0.0002	<0.0002	0.0003	<0.0002	0.0046	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0049	0.0049	-	-
QLD_0861_PFAS	SD151	14 Jun 2018	Normal	<0.0002	<0.0002	0.0006	<0.0002	0.0058	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0064	0.0064	-	-
QLD_0861_PFAS	SD152	14 Jun 2018	Normal	<0.0002	<0.0002	0.0002	<0.0002	0.0014	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0016	0.0016	-	-
QLD_0861_PFAS	SD153	14 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0009	0.0009	-	-
QLD_0861_PFAS	SD154	15 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD155	16 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD156	16 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD157	16 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD158	21 Jun 2018	Normal	<0.0002	<0.0002	0.0009	<0.0002	0.007	<0.0002	<0.001	0.0004	0.0005	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0079	0.0096	-	-
QLD_0861_PFAS	SD159	21 Jun 2018	Normal	<0.0002	<0.0002	0.0004	<0.0002	0.0037	<0.0002	<0.001	0.0003	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0041	0.0048	-	-
QLD_0861_PFAS	SD159	21 Jun 2018	Interlab_D	<0.0002	<0.0002	0.0006	<0.0002	0.012	<0.0004	<0.0004	<0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.001	<0.001	<0.001	<0.005	<0.0002	<0.0002	<0.0002	<0.0002	<0.002	<0.002	<0.0004	<0.002	<0.002	<0.0004	<0.005	-	-	-	-
QLD_0861_PFAS	SD159	21 Jun 2018	Field_D	<0.0002	<0.0002	0.0007	<0.0002	0.0054	<0.0002	<0.001	<0.0002	0.0004	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0061	0.0068	-	-
QLD_0861_PFAS	SD160	29 Jun 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0008	0.0008	0.0007	<0.0002
QLD_0861_PFAS	SD160	29 Jun 2018	Interlab_D	<0.0001	<0.0001	<0.0001	<0.0001	0.0015	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.001	<0.001	<0.0002	<0.001	<0.001	<0.0002	<0.005	-	-	-	-
QLD_0861_PFAS	SD160	29 Jun 2018	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0009	0.0009	0.0008	<0.0002
QLD_0861_PFAS	SD161	03 Jul 2018	Normal	<0.0002	<0.0002	0.0006	<0.0002	0.0016	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0022	0.0022	-	-
QLD_0861_PFAS	SD161	03 Jul 2018	Field_D	<0.0002	<0.0002	0.0007	<0.0002	0.0024	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0031	0.0031	-	-
QLD_0861_PFAS	SD162	27 Jul 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	0.0002	0.0002	-	-
QLD_0861_PFAS	SD162	27 Jul 2018	Interlab_D	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.005	<0.0001	<0.0001	<0.0001	<0.0001	<0.001	<0.001	<0.0002	<0.001	<0.001	<0.0002	<0.005	-	-	-	-
QLD_0861_PFAS	SD162	27 Jul 2018	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0002	-	-
QLD_0861_PFAS	SD163	27 Sep 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0095	<0.0002	<0.001	<0.0002	0.0013	0.0023	0.0065	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0377	<0.0005	<0.0002	<0.0005	0.0066	0.018	0.006	0.0095	0.0882	0.0079	0.0016
QLD_0861_PFAS	SD164	27 Sep 2018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	0.0046	<0.0002	<0.001	<0.0002	0.0004	0.0003	0.0011	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0314	<0.0005	<0.0002	<0.0005	0

				Perfluoroalkyl Sulfonic Acids						Perfluoroalkyl Carboxylic Acids										Fluorotelomer Sulfonic Acids				Perfluoroalkyl Sulfonamides							Sums		PFOS	
				PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	Sum of PFHxS and PFOS	Sum of PFAS	PFOS - Linear	PFOS - Branched
			Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			LOR	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0002	0.0005	0.0001	0.0001	0.0001	0.0001	0.0002	0.0005	0.0002	0.0005	0.0005	0.0002	0.0005	0.0001	0.0001	0.0002	0.0002
Project ID	**Location**	**Date**	**Type**																																
QLD_Hist_202012-3	SD204	28 Feb 2017	Normal	*<0.0002*	0.0003	0.0026	0.0003	0.0228	0.0002	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.0254	0.0262	-	-
QLD_Hist_202012-3	SD204	17 Oct 2017	Normal	*<0.0002*	*<0.0002*	0.0012	*<0.0002*	0.008	*<0.0002*	*<0.001*	*<0.0002*	0.0004	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.0092	0.0096	-	-
QLD_Hist_202012-3	SD205	22 Aug 2013	Normal	-	-	-	-	0.204	-	-	-	-	-	0.0025	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD205	22 Aug 2013	Normal	-	-	-	-	0.258	-	-	-	-	-	0.0011	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD205	21 Feb 2017	Normal	0.0012	0.0018	0.0118	0.0036	0.123	0.0023	*<0.001*	0.0021	0.0052	0.0019	0.0038	0.0005	0.001	0.0039	0.0017	0.0002	*<0.0005*	*<0.0005*	0.0022	0.0037	*<0.0005*	0.0048	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.135	0.175	-	-
QLD_Hist_202012-3	SD205	10 Oct 2017	Normal	0.0003	0.0002	0.0025	0.0008	0.0301	0.0004	*<0.001*	*<0.0002*	0.0007	*<0.0002*	0.0003	*<0.0002*	0.0002	0.0004	0.0006	0.0003	*<0.0005*	*<0.0005*	*<0.0005*	0.0007	0.0017	*<0.0005*	0.0013	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.0326	0.0405	-	-
QLD_Hist_202012-3	SD206	23 Aug 2013	Normal	-	-	-	-	0.019	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD206	23 Aug 2013	Normal	-	-	-	-	0.0234	-	-	-	-	-	0.0005	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD207	02 Oct 2013	Normal	-	-	-	-	*<0.0005*	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD207	02 Oct 2013	Normal	-	-	-	-	0.0005	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD207	03 Mar 2017	Normal	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.001*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0012*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0012*	*<0.0005*	*<0.0012*	*<0.0012*	*<0.0005*	*<0.0012*	*<0.0005*	*<0.0005*	-	-
QLD_Hist_202012-3	SD207	17 Oct 2017	Normal	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	-	-
QLD_Hist_202012-3	SD208	23 Aug 2013	Normal	-	-	-	-	0.0046	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD209	27 Jul 2012	Normal	-	-	-	-	*<0.0005*	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD209	27 Jul 2012	Normal	-	-	-	-	*<0.0005*	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD209	09 Oct 2012	Normal	-	-	-	-	0.055	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD209	09 Oct 2012	Normal	-	-	-	-	0.0508	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD209	16 Jan 2013	Normal	-	-	-	-	0.0535	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD209	16 Jan 2013	Normal	-	-	-	-	0.113	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD209	15 Aug 2013	Normal	-	-	-	-	*<0.0005*	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD209	15 Aug 2013	Normal	-	-	-	-	0.0014	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD209	02 Mar 2017	Normal	*<0.0005*	*<0.0005*	0.0006	*<0.0005*	*<0.0005*	*<0.0005*	0.007	0.0008	0.0005	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0012*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0012*	*<0.0005*	*<0.0012*	*<0.0012*	*<0.0005*	*<0.0012*	0.0006	0.0089	-	-
QLD_Hist_202012-3	SD209	17 Oct 2017	Normal	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	0.0007	*<0.0002*	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.0007	0.0007	-	-
QLD_Hist_202012-3	SD210	21 Aug 2013	Normal	-	-	-	-	0.0076	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD210	21 Aug 2013	Normal	-	-	-	-	0.0055	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD211	23 Aug 2013	Normal	-	-	-	-	0.119	-	-	-	-	-	0.0006	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD212	12 Sep 2013	Normal	*<0.0002*	-	0.0008	-	0.0025	-	-	-	0.0011	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.001*	-	*<0.005*	*<0.001*	-	*<0.0002*	*<0.001*	-	*<0.001*	*<0.001*	-	*<0.001*	-	-	-	-
QLD_Hist_202012-3	SD212	12 Sep 2013	Normal	*<0.0002*	-	0.0022	-	0.0048	-	-	-	0.0018	0.0002	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.001*	-	*<0.005*	*<0.001*	-	*<0.0002*	*<0.001*	-	*<0.001*	*<0.001*	-	*<0.001*	-	-	-	-
QLD_Hist_202012-3	SD213	11 Oct 2012	Normal	-	-	-	-	0.0012	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD213	11 Oct 2012	Normal	-	-	-	-	0.0008	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD213	21 Jan 2013	Normal	-	-	-	-	*<0.0005*	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD213	21 Jan 2013	Normal	-	-	-	-	0.0046	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD213	22 Aug 2013	Normal	-	-	-	-	0.0032	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD213	22 Aug 2013	Normal	-	-	-	-	*<0.0005*	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD213	03 Mar 2017	Normal	*<0.0002*	*<0.0002*	0.0002	*<0.0002*	0.002	*<0.0002*	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.0022	0.0022	-	-
QLD_Hist_202012-3	SD213	06 Oct 2017	Normal	*<0.0002*	*<0.0002*	0.0009	*<0.0002*	0.0049	*<0.0002*	*<0.001*	*<0.0002*	0.0004	0.0002	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.0058	0.0064	-	-
QLD_Hist_202012-3	SD228	27 Jul 2012	Normal	-	-	-	-	0.0264	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD228	27 Jul 2012	Normal	-	-	-	-	0.0261	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD228	09 Oct 2012	Normal	-	-	-	-	0.173	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD228	09 Oct 2012	Normal	-	-	-	-	0.903	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD228	18 Jan 2013	Normal	-	-	-	-	0.0271	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD228	18 Jan 2013	Normal	-	-	-	-	0.0714	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD228	15 Aug 2013	Normal	-	-	-	-	0.009	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD228	15 Aug 2013	Normal	-	-	-	-	0.069	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD228	02 Mar 2017	Normal	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	0.0037	*<0.0002*	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.0037	0.0037	-	-
QLD_Hist_202012-3	SD228	16 Oct 2017	Normal	*<0.0002*	*<0.0002*	0.0002	*<0.0002*	0.0047	*<0.0002*	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.0049	0.0049	-	-
QLD_Hist_202012-3	SD229	02 Aug 2012	Normal	-	-	-	-	0.87	-	-	-	-	-	0.0062	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD229	02 Aug 2012	Normal	-	-	-	-	1.04	-	-	-	-	-	0.0052	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD229	11 Oct 2012	Normal	-	-	-	-	0.0058	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD229	11 Oct 2012	Normal	-	-	-	-	0.016	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD229	17 Jan 2013	Normal	-	-	-	-	0.0131	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD229	17 Jan 2013	Normal	-	-	-	-	0.852	-	-	-	-	-	0.0021	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD229	21 Aug 2013	Normal	-	-	-	-	0.0012	-	-	-	-	-	*<0.0005*	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD229	21 Aug 2013	Normal	-	-	-	-	0.0835	-	-	-	-	-	0.0008	-	-	-	-	-	-	-	*<0.005*	-	-	-	-	-	-	-	-	-	-	-	-
QLD_Hist_202012-3	SD229	02 Mar 2017	Normal	*<0.0012*	*<0.0012*	0.002	*<0.0012*	0.0116	*<0.0012*	0.016	0.0054	0.0016	*<0.0012*	*<0.0012*	*<0.0012*	*<0.0012*	*<0.0012*	*<0.0012*	*<0.0012*	*<0.0031*	*<0.0012*	*<0.0012*	*<0.0012*	*<0.0012*	*<0.0012*	*<0.0031*	*<0.0012*	*<0.0031*	*<0.0031*	*<0.0012*	*<0.0031*	0.0136	0.0366	-	-
QLD_Hist_202012-3	SD229	16 Oct 2017	Normal	0.0002	*<0.0002*	0.0014	*<0.0002*	0.0159	*<0.0002*	*<0.001*	*<0.0002*	0.0004	*<0.0002*	0.0002	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	0.0006	*<0.0005*	0.0004	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.0173	0.0191	-	-
QLD_0861_PFASMGMT	SD509	11 Feb 2022	Normal	0.0006	0.0008	0.0069	0.0008	0.0604	0.0018	*<0.002*	0.0017	0.0018	0.0006	0.0012	*<0.0005*	0.0006	*<0.0010*	0.0042	0.0011	0.002	*<0.0005*	0.0005	*<0.0013*	0.0008	0.004	*<0.0013*	*<0.0005*	*<0.0013*	*<0.0013*	*<0.0005*	*<0.0013*	0.0673	0.0898	-	-
QLD_0861_PFASMGMT	SD517	04 Feb 2022	Normal	0.0011	0.0009	0.0094	0.0016	0.186	0.0028	0.001	0.001	0.0013	0.0002	0.0007	*<0.0002*	0.0002	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.195	0.206	-	-
QLD_0861_PFASMGMT	SD518	10 Aug 2021	Normal	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0020*	*<0.0002*	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0004*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	-	-
QLD_0861_PFASMGMT	SD520	10 Aug 2021	Normal	*<0.0002*	*<0.0002*	0.0016	0.0002	0.0224	0.0004	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	0.0002	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.024	0.0248	-	-
QLD_0861_PFASMGMT	SD520	10 Aug 2021	Interlab_D	*<0.005*	*<0.005*	*<0.005*	*<0.005*	0.016	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.01*	*<0.005*	0.016	*<0.05*	-	-
QLD_0861_PFASMGMT	SD520	10 Aug 2021	Field_D	*<0.0002*	*<0.0002*	0.0016	*<0.0002*	0.0175	0.0004	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	0.0002	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.0191	0.0197	-	-
QLD_0861_PFASMGMT	SD521	10 Aug 2021	Normal	0.0046	0.0036	0.0366	0.0032	0.221	0.0025	0.005	0.0025	0.0075	0.0006	0.0014	0.0004	0.0006	0.0005	0.0003	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	0.0002	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.258	0.29	-	-
QLD_0861_PFASMGMT	SD522	10 Aug 2021	Normal	*<0.0002*	*<0.0002*	0.0015	0.0002	0.0197	*<0.0004*	*<0.001*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.0212	0.0214	-	-
QLD_0861_PFASMGMT	SD523	10 Aug 2021	Normal	0.0009	0.0011	0.0122	0.001	0.0785	*<0.0008*	*<0.002*	0.0002	0.0014	*<0.0002*	0.0005	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.0907	0.0958	-	-
QLD_0861_PFASMGMT	SD524	10 Aug 2021	Normal	*<0.0005*	*<0.0005*	0.0034	*<0.0005*	0.0804	0.0005	*<0.003*	0.0008	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0012*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0012*	*<0.0005*	*<0.0012*	*<0.0012*	*<0.0005*	*<0.0012*	0.0838	0.0851	-	-
QLD_0861_PFASMGMT	SD525	10 Aug 2021	Normal	*<0.0050*	*<0.0050*	0.019	0.0052	3.13	0.0066	*<0.025*	*<0.0050*	*<0.0050*	*<0.0050*	0.0059	*<0.0050*	*<0.0050*	*<0.0050*	*<0.0050*	*<0.0050*	*<0.0124*	*<0.0050*	*<0.0050*	*<0.0050*	*<0.0050*	0.0072	*<0.0124*	*<0.0050*	*<0.0124*	*<0.0124*	*<0.0050*	*<0.0124*	3.15	3.17	-	-
QLD_0861_PFASMGMT	SD526	10 Aug 2021	Normal	*<0.0002*	*<0.0002*	0.0007	*<0.0002*	0.0113	0.0004	*<0.003*	0.0002	0.0003	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.012	0.0129	-	-
QLD_0861_PFASMGMT	SD527	10 Aug 2021	Normal	*<0.0002*	*<0.0002*	0.0002	*<0.0002*	0.0087	0.0003	*<0.001*	*<0.0002*	0.0004	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.0089	0.0096	-	-
QLD_0861_PFASMGMT	SD528	10 Aug 2021	Normal	0.0003	0.0003	0.0028	0.0003	0.0325	0.0006	*<0.001*	*<0.0002*	0.0003	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.0353	0.0371	-	-
QLD_0861_PFASMGMT	SD529	10 Aug 2021	Normal	0.001	0.0006	0.0045	0.0005	0.0603	*<0.0006*	*<0.001*	0.0011	0.0025	0.0002	0.001	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.0648	0.0717	-	-
QLD_0861_PFASMGMT	SD530	10 Aug 2021	Normal	*<0.0004*	*<0.0002*	0.0021	0.0003	0.0211	0.0013	*<0.003*	*<0.0004*	0.0003	*<0.0002*	0.0003	*<0.0002*	*<0.0002*	0.0003	*<0.0004*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	0.0006	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.0232	0.0263	-	-
QLD_0861_PFASMGMT	SD530	10 Aug 2021	Interlab_D	*<0.005*	*<0.005*	*<0.005*	*<0.005*	0.028	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.01*	*<0.005*	*<0.01*	*<0.005*	0.028	*<0.05*	-	-
QLD_0861_PFASMGMT	SD530	10 Aug 2021	Field_D	0.0002	*<0.0002*	0.0015	*<0.0002*	0.0282	0.0021	*<0.001*	*<0.0004*	0.0003	*<0.0002*	*<0.0004*	*<0.0002*	*<0.0002*	*<0.0004*	*<0.0004*	0.0003	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	*<0.0005*	0.0007	*<0.0005*	*<0.0002*	*<0.0005*	*<0.0005*	*<0.0002*	*<0.0005*	0.0297	0.0333	-	-

LOR is limit of reporting
mg/kg is milligrams per kilogram
'-' denotes no analysis undertaken
'<' denotes concentration is less than
Sample results for SD518-SD530 are from PMAP Delivery project

Appendix C

Infrastructure Projects

Appendix C Infrastructure Projects

The table below presents a summary of recent infrastructure projects at the Base since 2019. The information was provided by the RAAF Base Amberley Environmental Sustainability Manager and the Estate Manager during the monitoring period.

Project	Works Dates	Location	Approx. volume of soil disturbed	Other comments
EST00736 Hangar 410 fire system repair/upgrade works	Mid 2019 to Oct 2020	Hangar 410	6000 m^3	Majority of earth works were completed in 2019 and were associated with the construction of a collection tank for wastewater from the fire suppression system.
EST03312 MWD works package	Aug 19 - Aug 20	Military Working Dog Kennel precinct, AP-2	100 m^3	Douglas Partners, Oct 2018, Report on Pre-construction Contamination Assessment Military Working Dog Works.
EST03306 EO Area Building Works	Dec 19 - Apr 20	EO precinct	3 m^3	Disturbed soil re-used on-Base.
EST01170 RAAFSFS Fire School Works	From end 2019 ongoing	Fire Training School AP-2	1100 m^3	Works include the upgrade of the fire training system, including road infrastructure, trenching and refurbishment of the holding ponds. Including soil, asphalt and concrete
EST03313 AP1-1 Building refurbishment	Jan - Nov 20	Property 1, Frog's Hollow	250 m^3	Douglas Partners, Feb 2019, Report on Pre-construction Contamination Assessment Amberley ADFIS.
LAND121 AdBlue facility works	Apr-Oct 2020	Base Vehicle Fuel Point	Unknown	Lendlease, LAND 121 Stage 2A Unite Sustainment Facilities, RAAF Base Amberley, Contamination Management Sub Plan, 11 March 2020.
25m Range works EST03293	Mar to Jul 2020	25 metre range	Unknown	Topsoil stripped and re-used, some earth disturbance for footings, contaminated sand from the bullet catcher removed.
Battlefield Airlifter project	2015 to 2022	Multiple sites	5,000 m^3	Laing O'Rourke is contractor. Multiple projects including evaporation ponds and fire main works.
Canberra bomber shelter works	May 2020	Old Front Gate	Minor	

Project	Works Dates	Location	Approx. volume of soil disturbed	Other comments
EST5909 DFI Operations and EST05334 9FSB works initial Base contamination investigation	Jul 2020	9FSB and adjacent to DFI	Unknown	Report, Aurecon, 27 July 2020, EST05334 RAAF Amberley 9RSG Workshop Pre-Construction Contamination Assessment
EST06218 HQ CSG compound	Jul to Aug 2020	Near BLD 901	Unknown	Investigation completed by Douglas Partners.
EST04769 EOD storage works	Started 2020	Compounds 470 and 633	1,023 m^3	Aurecon, 2 December 2019, Amberley Ordnance Storage Works - waste classification of soils.
EST06218 HQ CSG compound site investigation	Started 2020	Near BLD 901	200 m^3	Technical Memorandum, Golder to St Hilliers, Proposed Movement of Soil on-base at RAAF Amberley, 9 Oct 2020.
EST04138 Defence Fuel Transformation Program Risk Reduction Works	Oct 20 to Mar 21	FF2	20 m^3	Sampling will occur during works. Soil disturbance is associated with excavation of a slab for new tank footings.
6ESR Replacing Gravel driveway with concrete within unit lines	Oct - Dec 20	6ESR	< 10 m^3	Material re-used on-Base.
P1005 NAPMP Pavement Maintenance Works	2021 – 2022	Airfield	Unknown	Pavement repairs etc. PMCA was Aurecon. Contractor was Fulton Hogan.
P1005 NAPMP Apron Reconstruction Hangar 832	2021 - 2022	Hangar 832	>4,000m^3	Refer Epic Environmental Material Classification BLD 832 Apron, 18 Dec 2020.
EST03298 Base Roads upgrade	2021	Roads	Unknown	Cardno, 4 June 2020, EST03298 Amberley Base Roads Maintenance, Soil Characterisation Report.
Construction of new STP	Q2 2023-2024	STP	Unknown	PMCA is Jacobs, contractor is St Hilliers. Major facility upgrade.
P10 Runway upgrade	2022 ongoing	Airfield	Unknown	Fulton Hogan is contractor. Location for asphalt batching plant is being selected. Beneficial reuse of asphalt for perimeter tracks.
EST5349PH6 Growler	2022 ongoing	Various	Unknown	PMCA is Jacobs. Construction of offices. Design phase complete, site selection in process. One site environmentally sensitive area

Project	Works Dates	Location	Approx. volume of soil disturbed	Other comments
				identified (Koalas). Report in process.
DFI office works	2022-2023	Next to DFI	Unknown	Habitat clearance and excavation. PMCA Aurecon. Contractor is Apollo.
Air traffic control project	2015 ongoing	Airfield	Unknown	Location of new build has required removal of thousands of trees around the old air traffic control tower and significant excavation.
Northern perimeter fence around airfield	2022- 2023	Northern airfield	Unknown- small volume	Security fence being erected with 300-450 plinths with 600-1000mm deep postholes. Low volume of soil excavated and battered against fence.

Appendix D

Statistical Analysis and Charts

Appendix D Graphs and Statistical Analysis

Mann-Kendall Graphs for PFAS Trend Analysis

AECOM

Appendix D Statistical Analysis and Charts

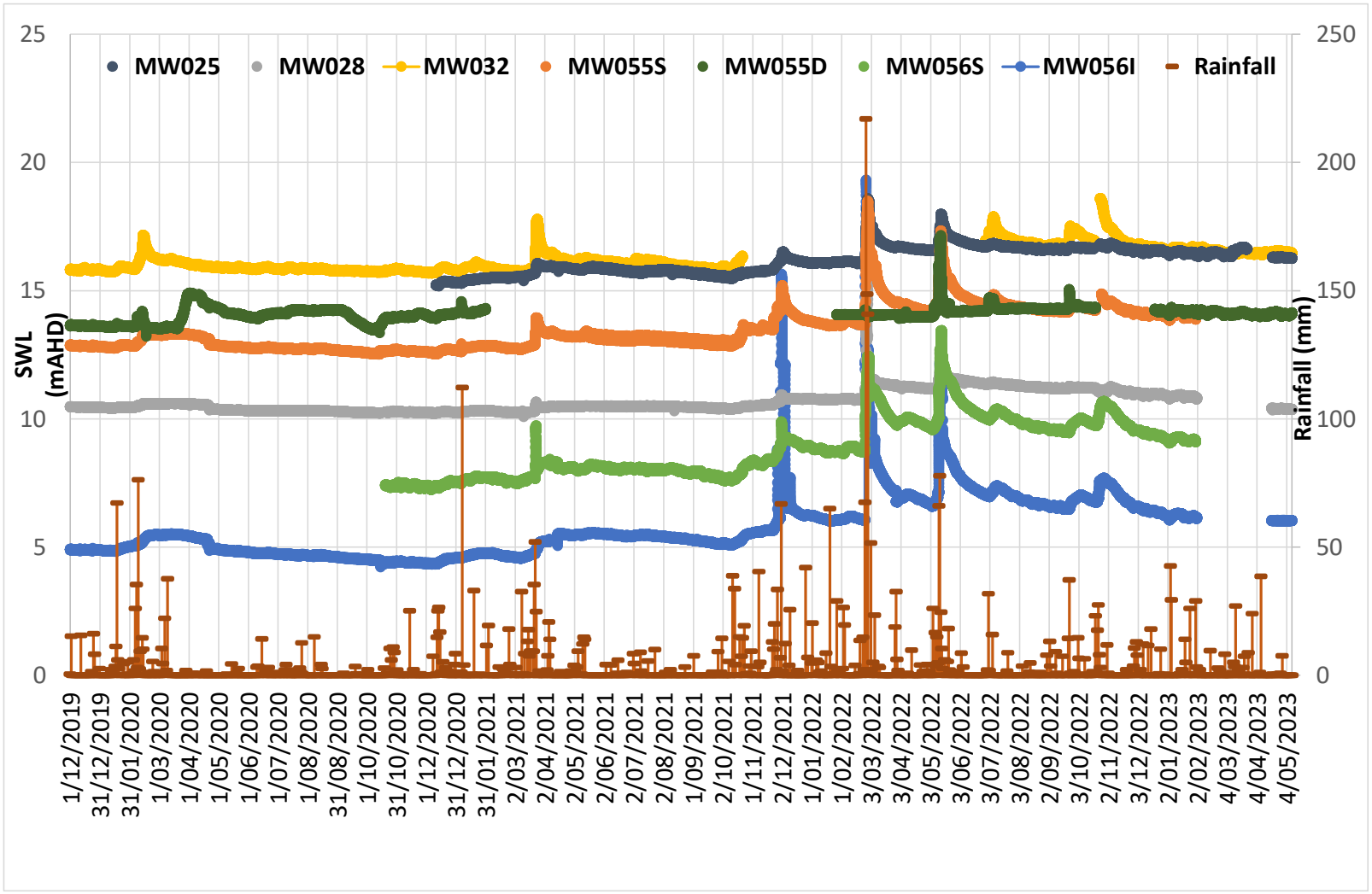

Chart D1 Groundwater elevations in selected monitoring wells: December 2019 to April 2023

AECOM

Appendix D Statistical Analysis and Charts

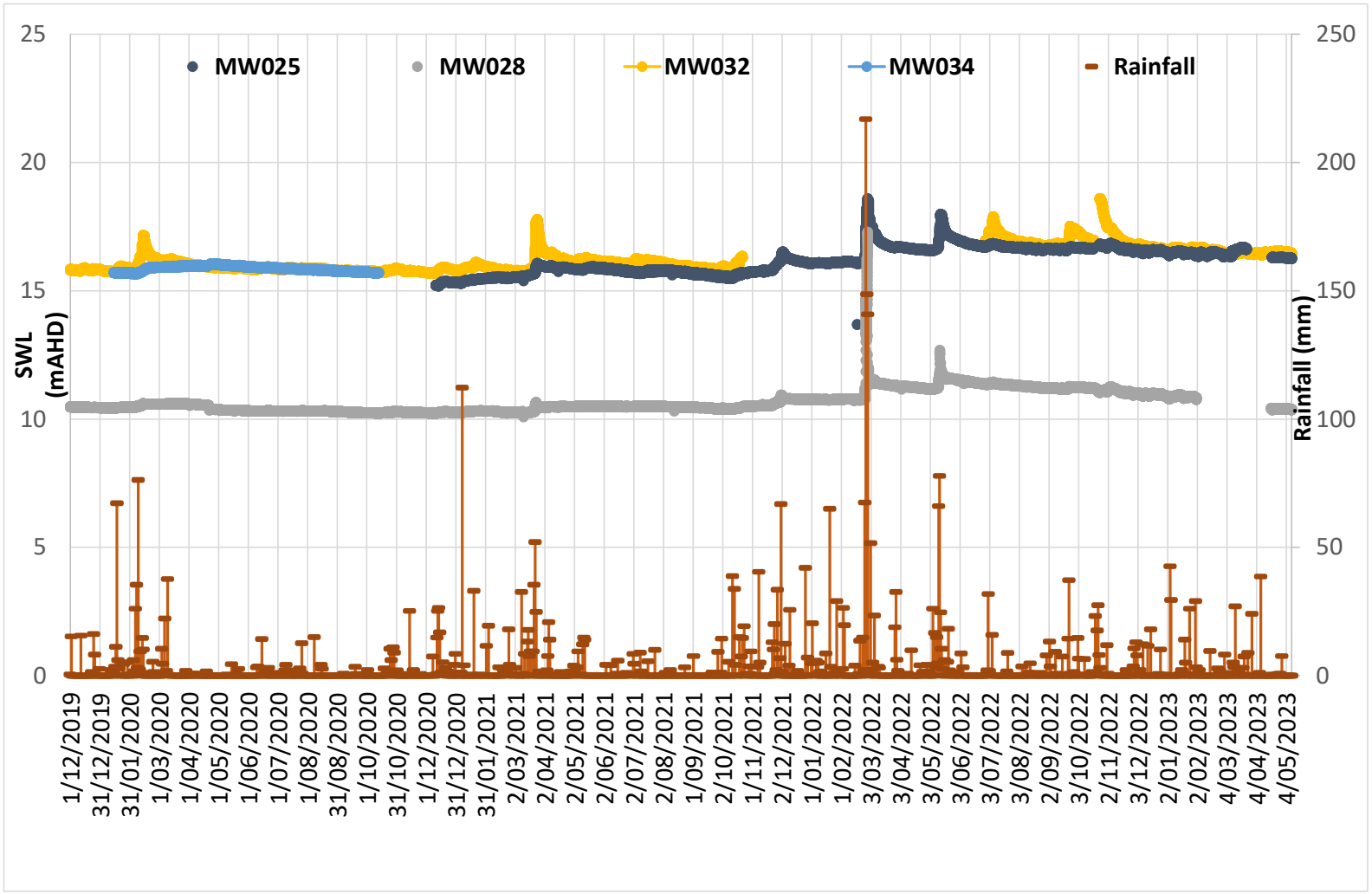

Chart D2 Groundwater elevations in MW025, MW028, MW032, MW034: December 2019 to April 2023

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Appendix D Statistical Analysis and Charts

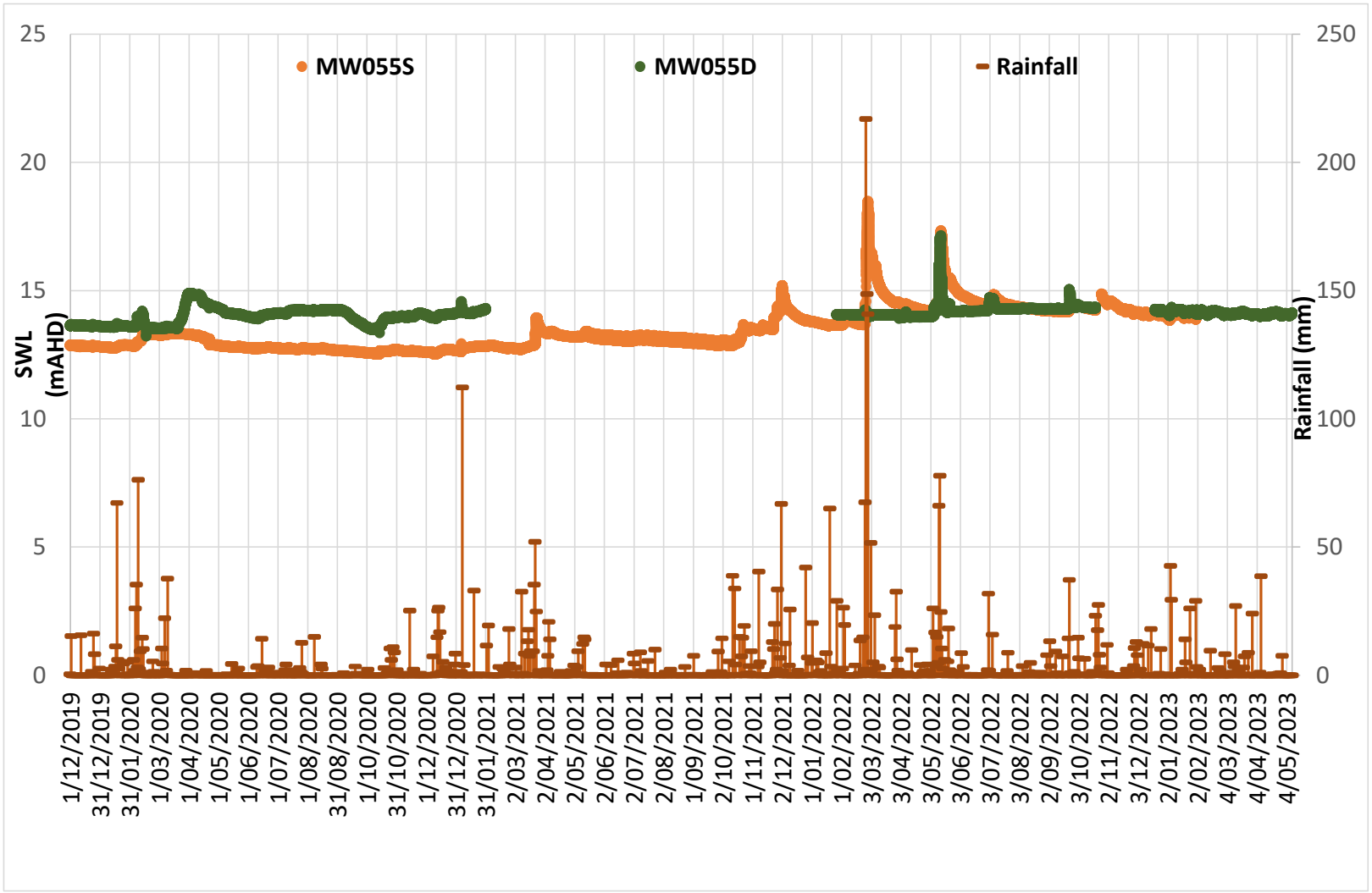

Chart D3 Groundwater elevations in MW055S and MW055D: December 2019 to April 2023

AECOM

Appendix D Statistical Analysis and Charts

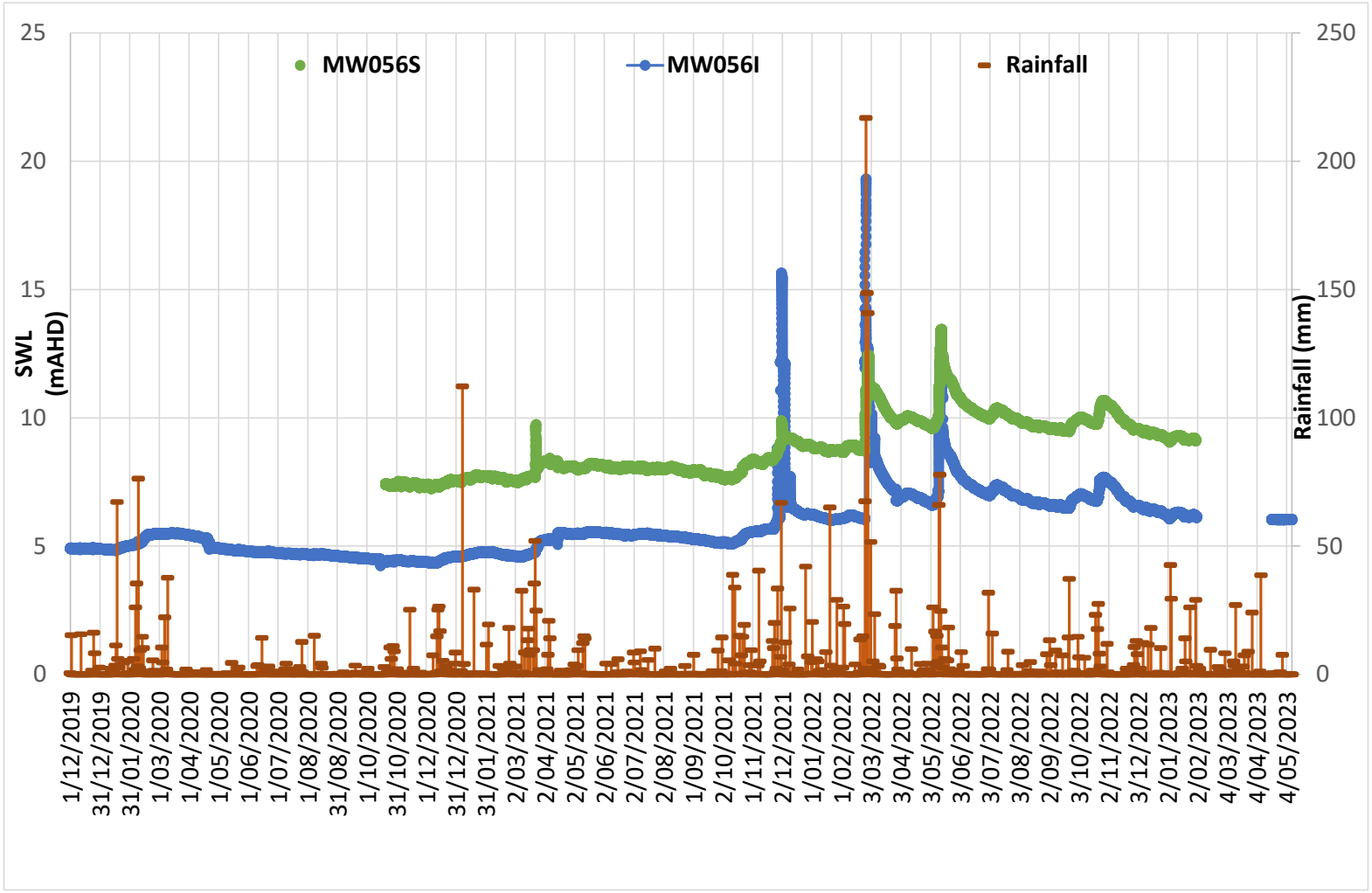

Chart D4 Groundwater elevations in MW056S and MW056I: December 2019 to April 2023

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Appendix D Statistical Analysis and Charts

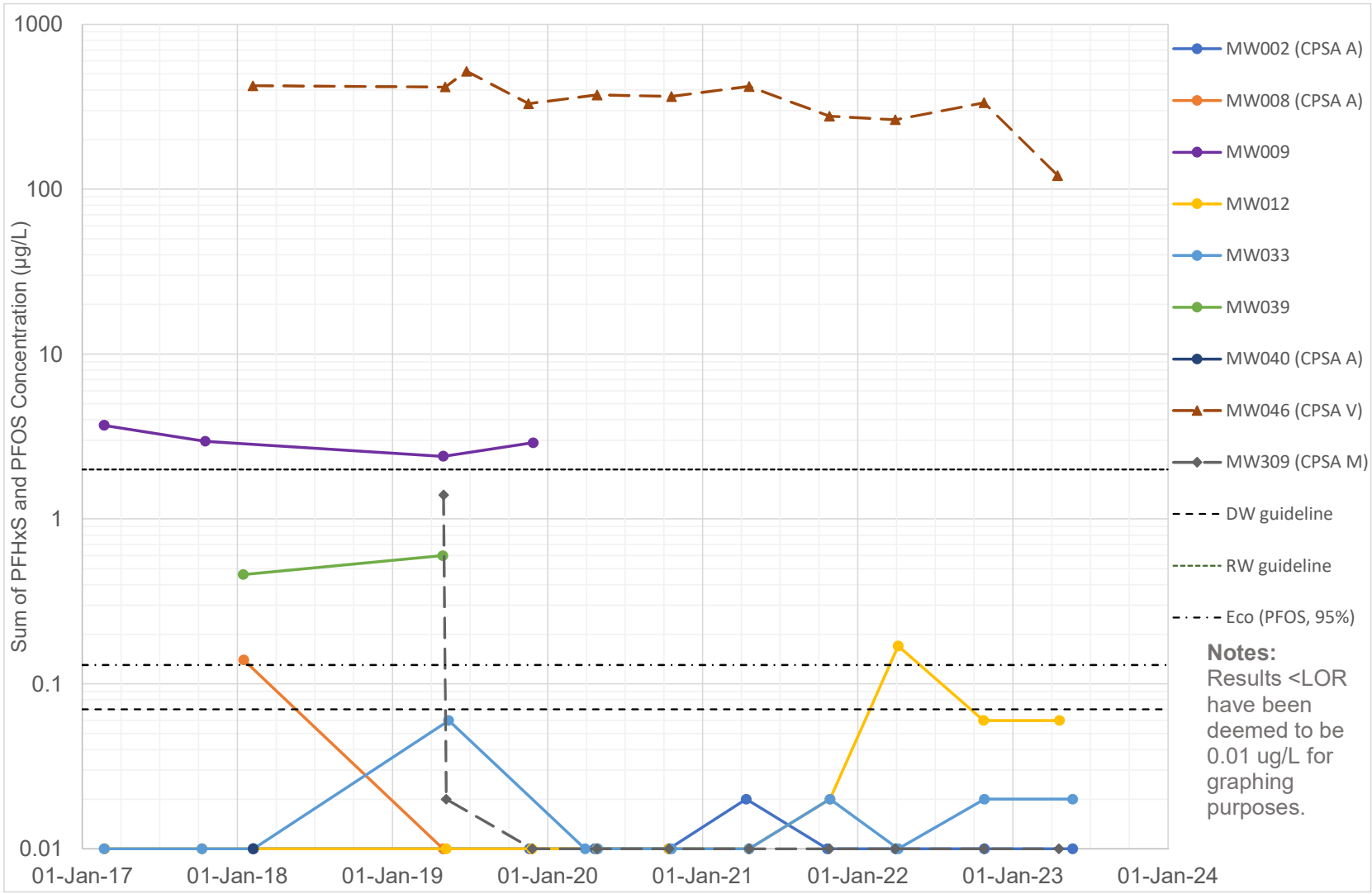

Chart D5 Sum of PFOS and PFHxS in groundwater in monitoring wells in the central portion of RAAF Base Amberley: 2017 to 2023

AECOM

Appendix D Statistical Analysis and Charts

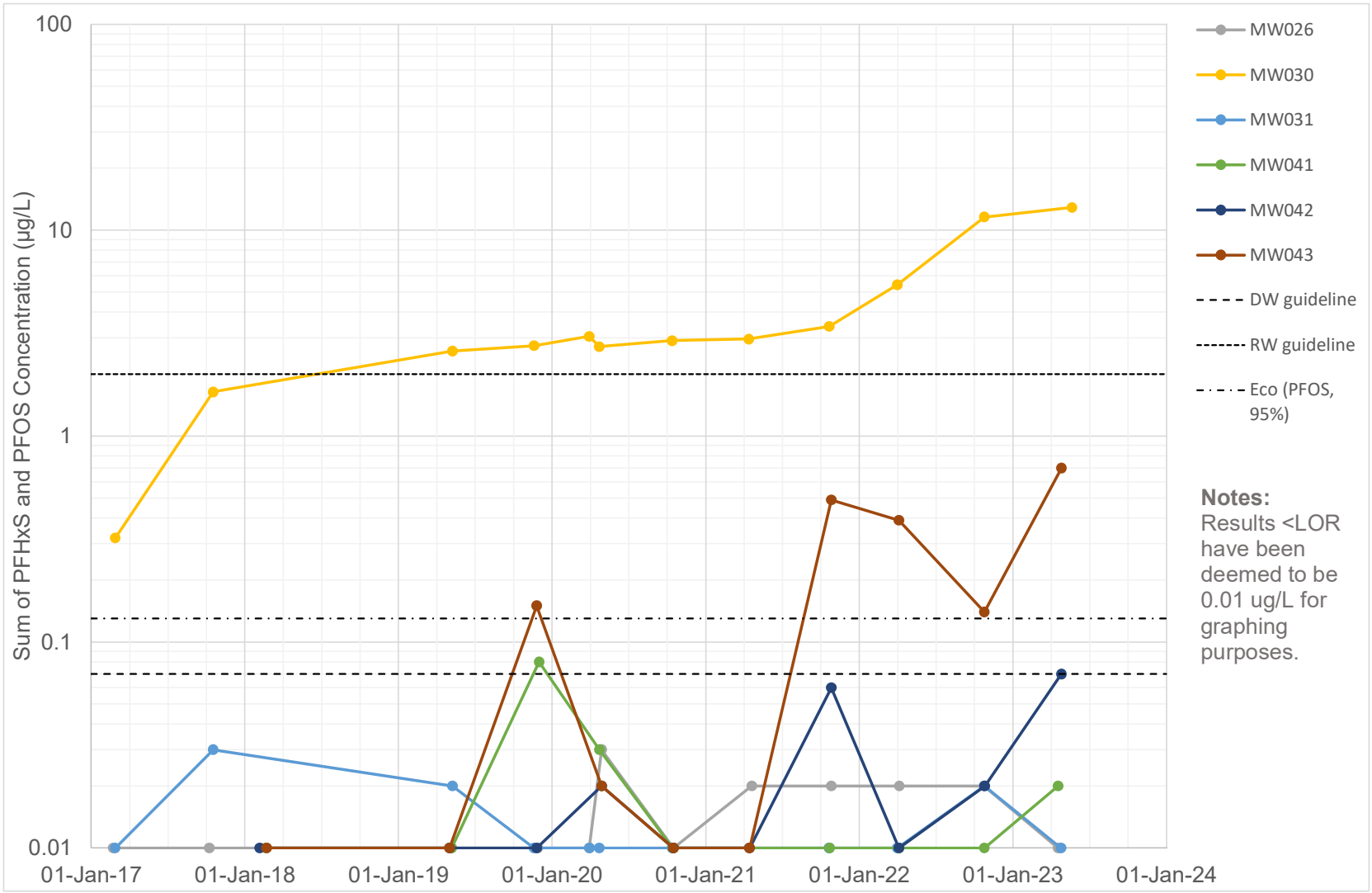

Chart D6 Sum of PFOS and PFHxS in groundwater in monitoring wells in the western portion of RAAF Base Amberley: 2017 to 2023

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Appendix D Statistical Analysis and Charts

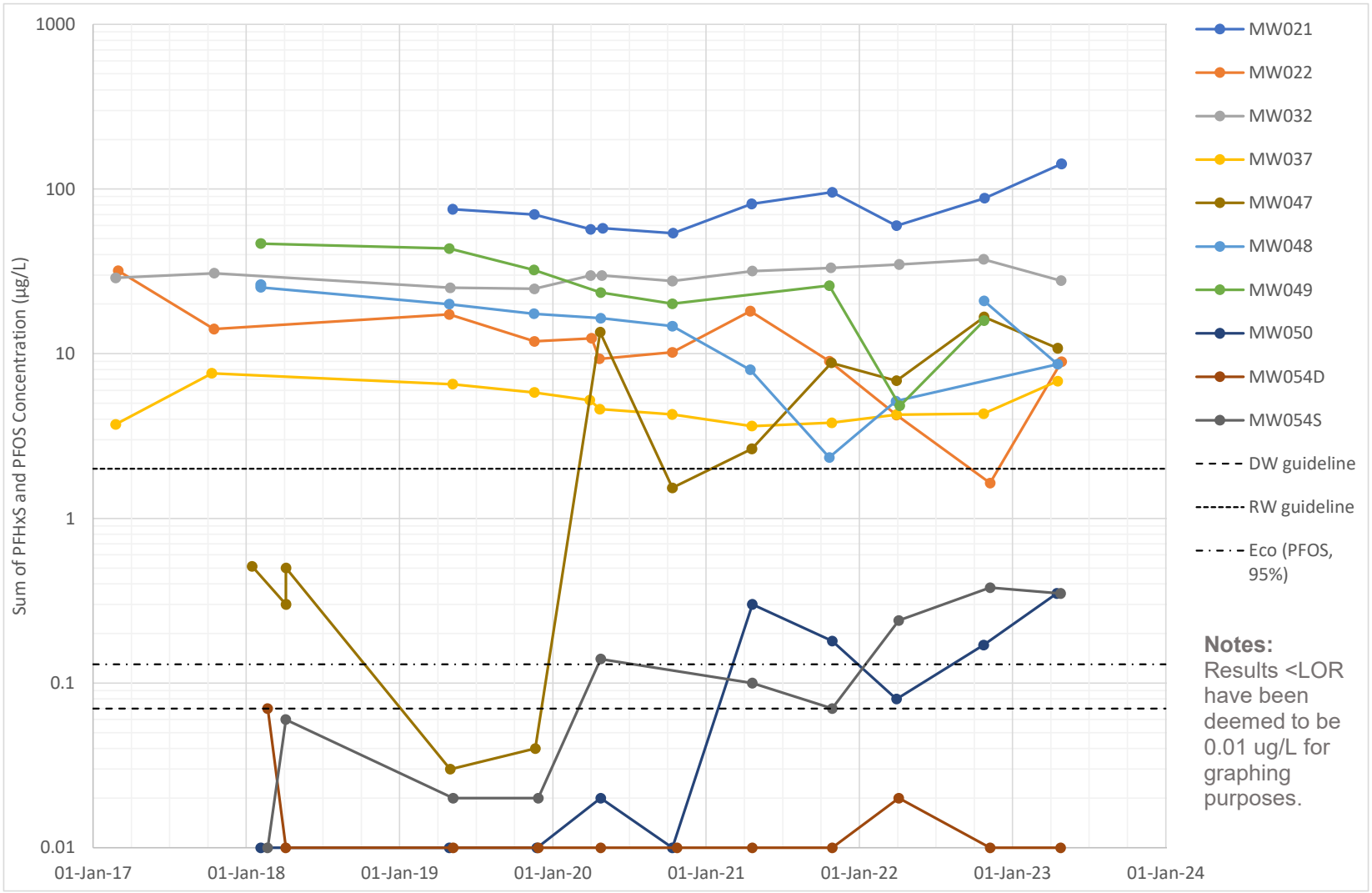

Chart D7 Sum of PFOS and PFHxS in groundwater in monitoring wells in the southern portion of RAAF Base Amberley: 2017 to 2023

AECOM

Appendix D Statistical Analysis and Charts

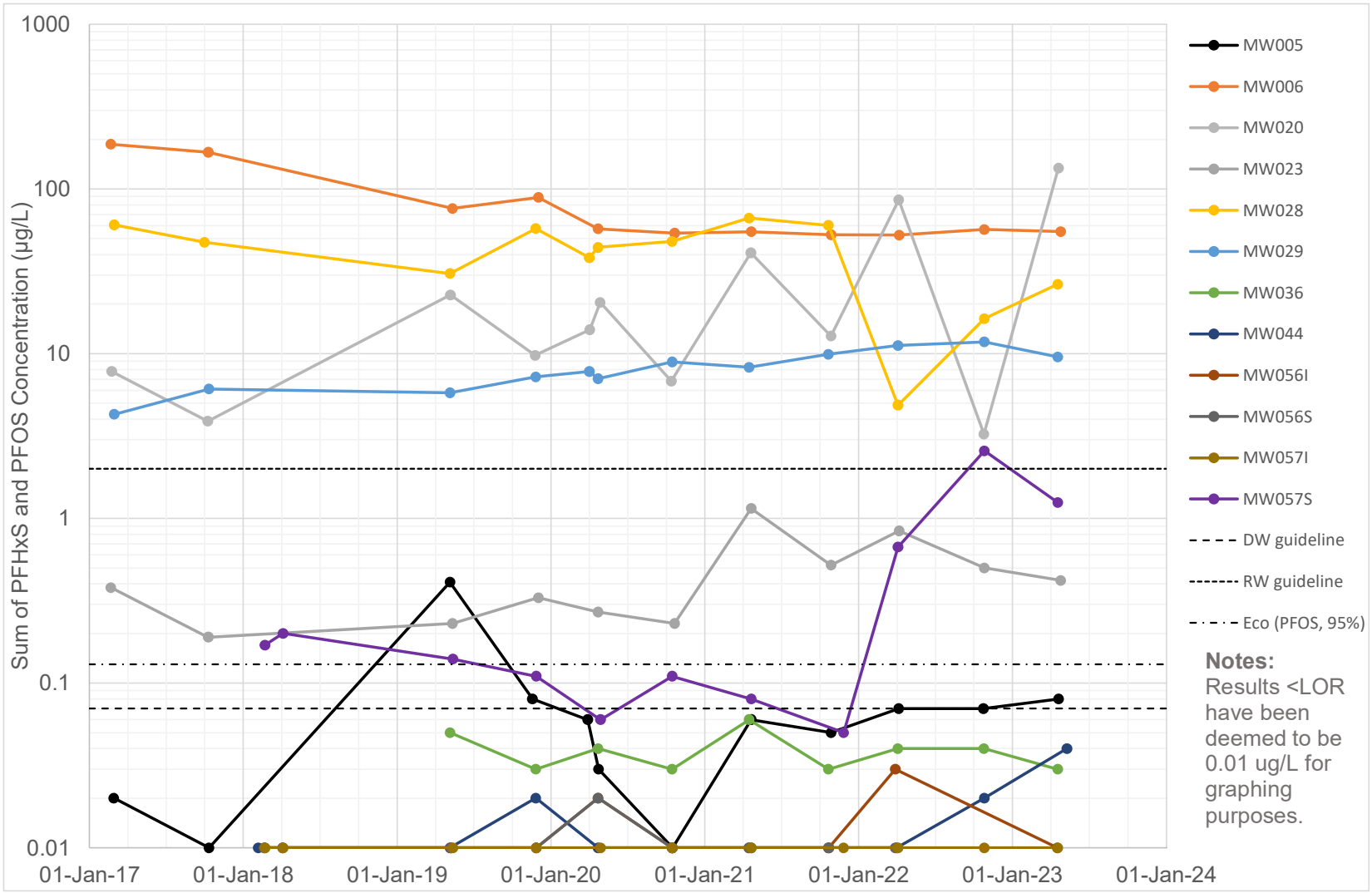

Chart D8 Sum of PFOS and PFHxS in groundwater in monitoring wells in the southeastern portion of RAAF Base Amberley: 2017 to 2023

AECOM

Appendix D Statistical Analysis and Charts

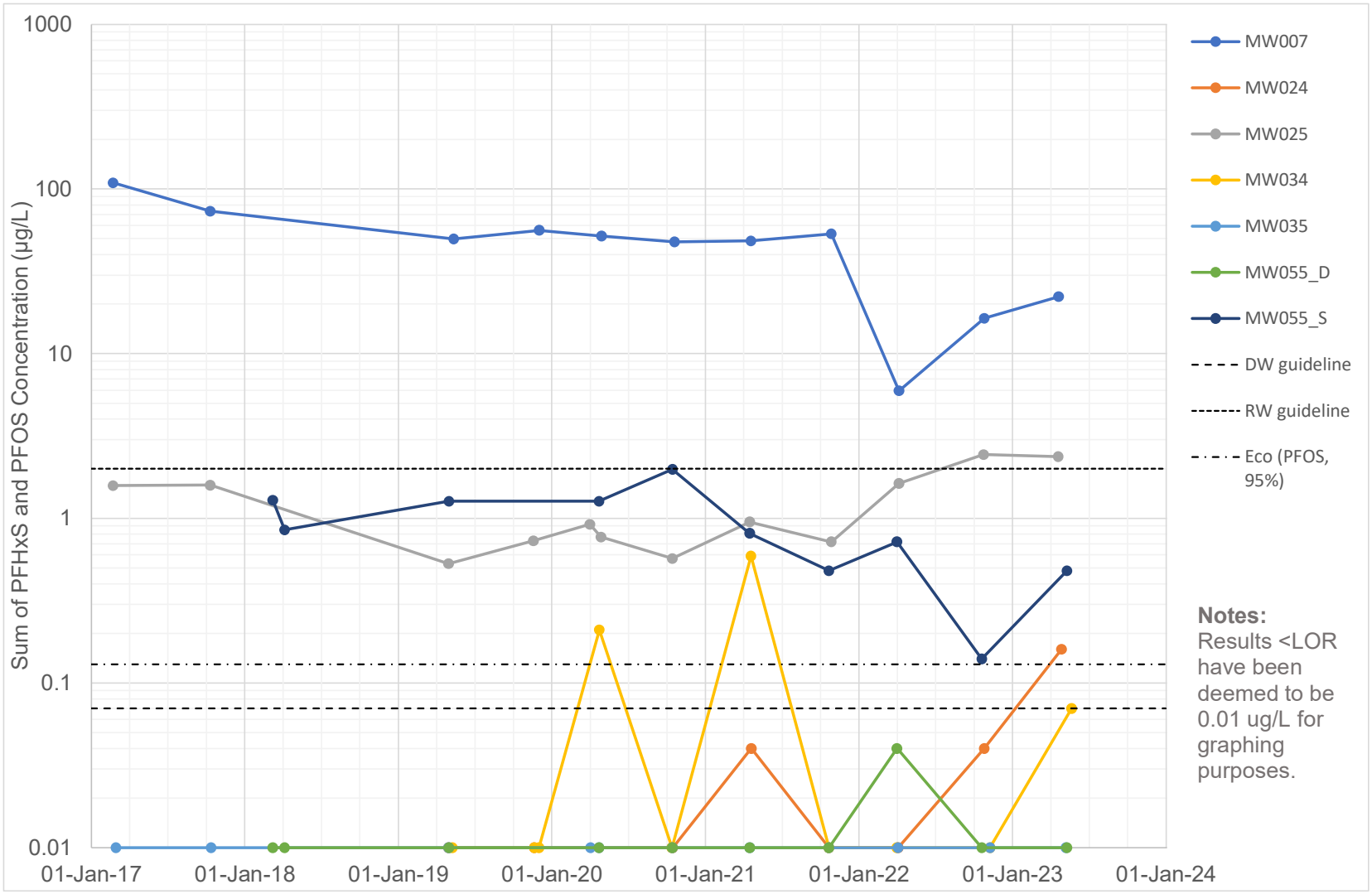

Chart D9 Sum of PFOS and PFHxS in groundwater in monitoring wells in the eastern portion of RAAF Base Amberley: 2017 to 2023

AECOM

Appendix D Statistical Analysis and Charts

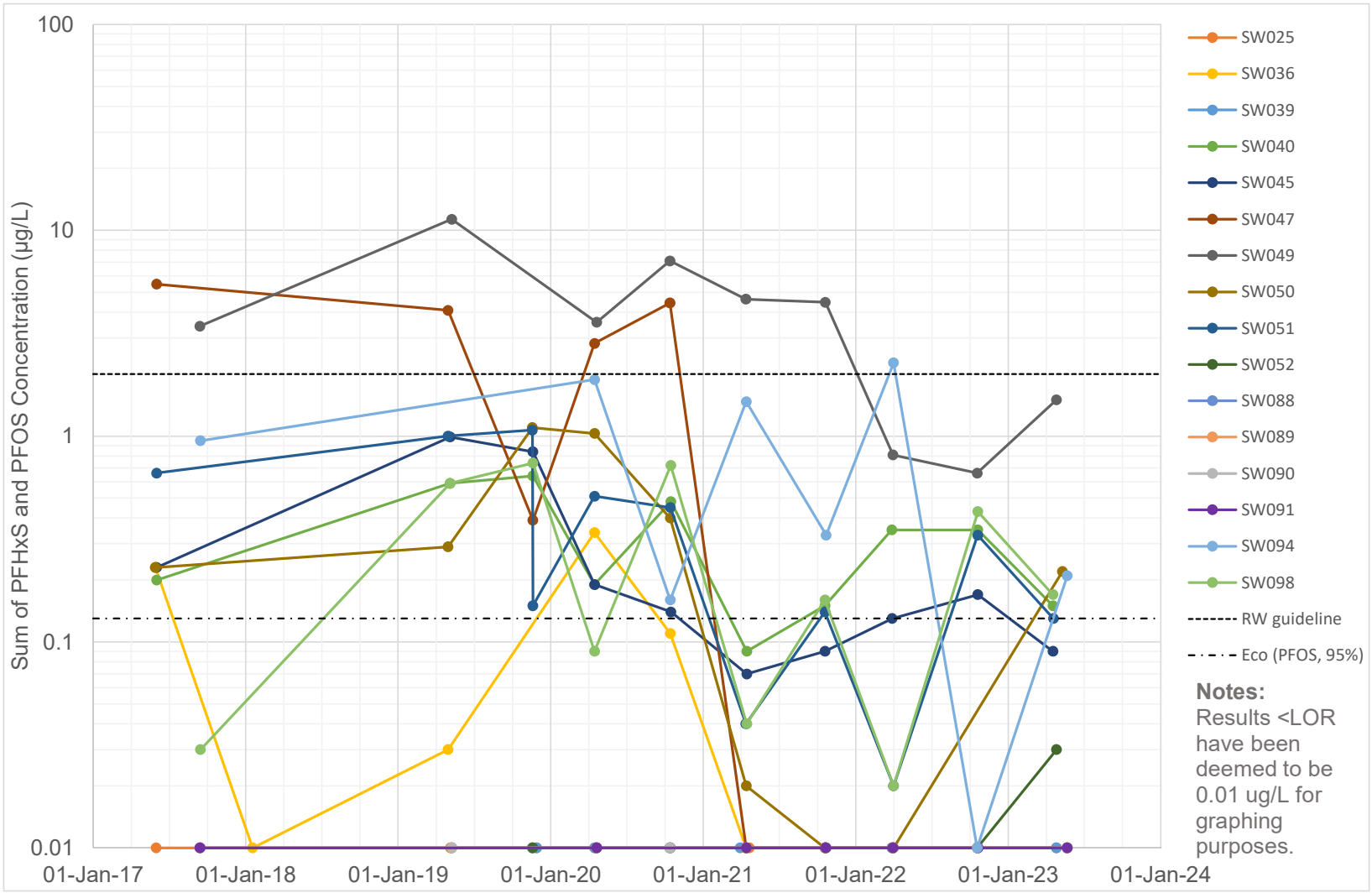

Chart D10 Sum of PFOS and PFHxS in surface water samples from Bremer River: 2017 to 2023

AECOM

Appendix D Statistical Analysis and Charts

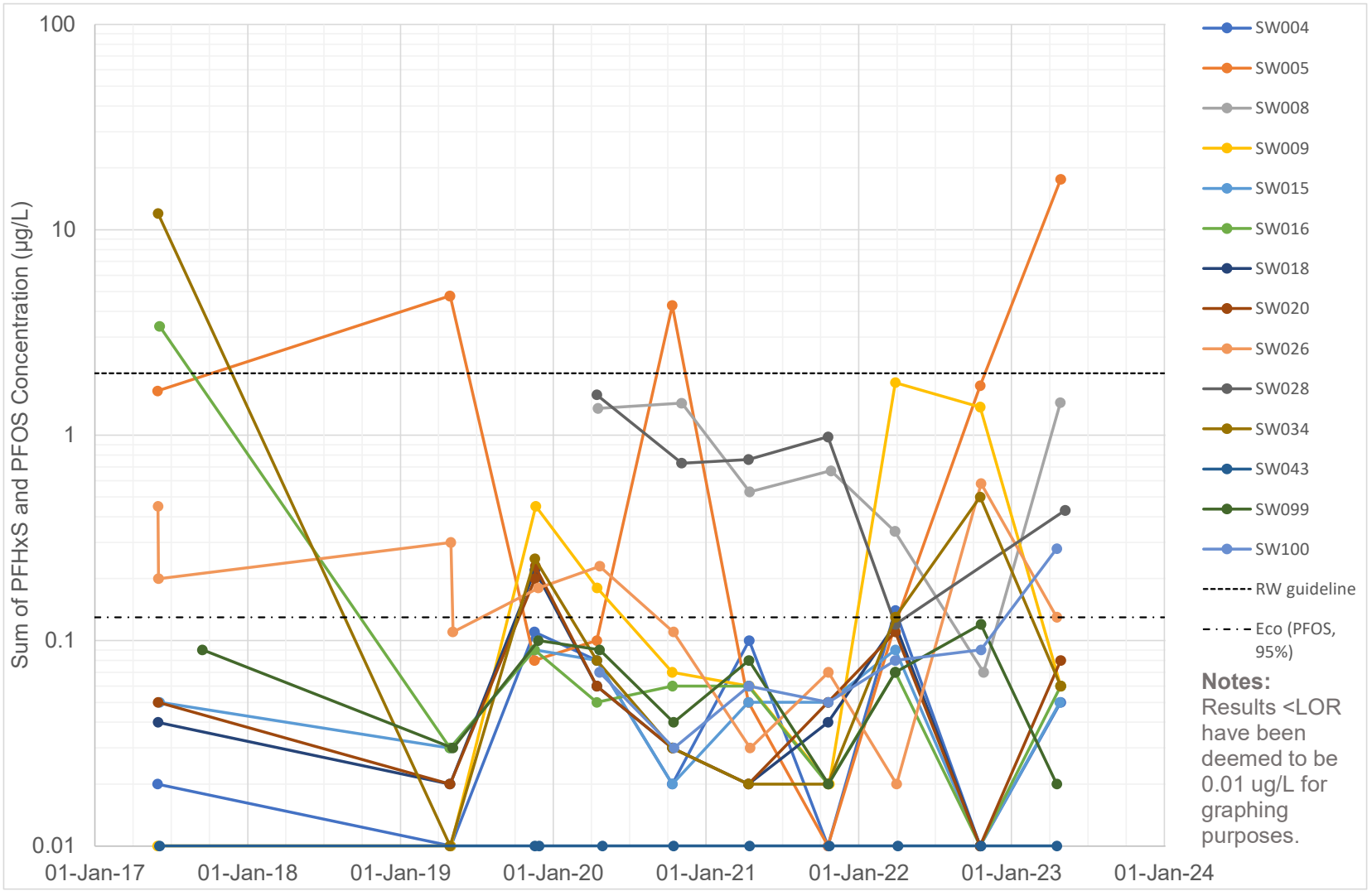

Chart D11 Sum of PFOS and PFHxS in surface water samples from Warrill Creek: 2017 to 2023

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Appendix D Statistical Analysis and Charts

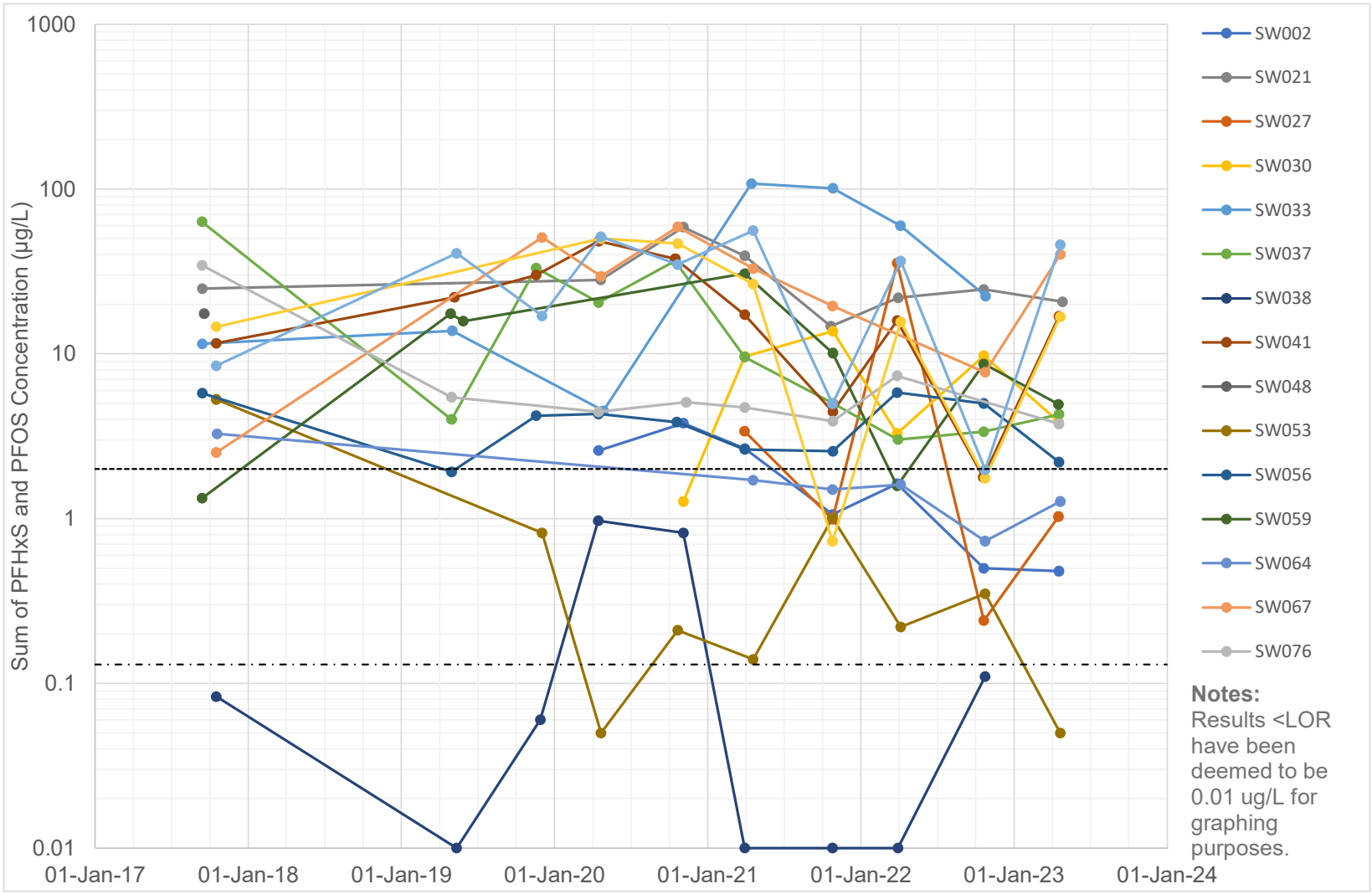
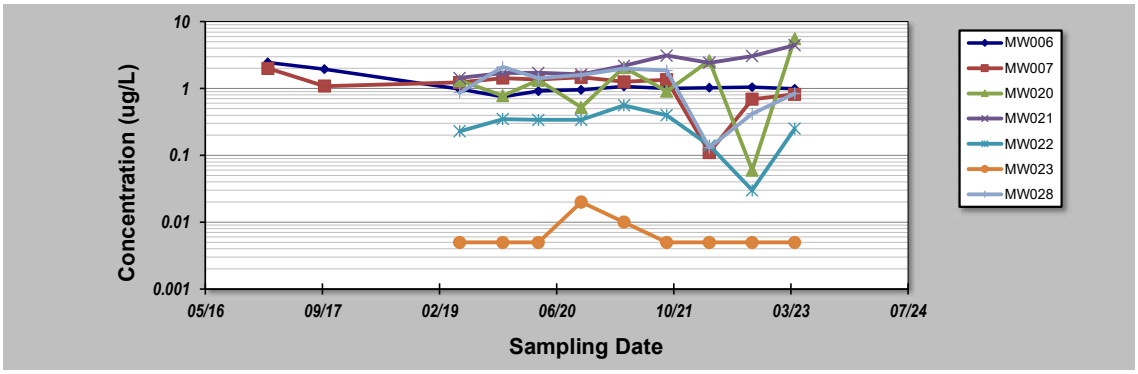


Chart D12 Sum of PFOS and PFHxS in surface water samples from drains at RAAF Base Amberley: 2017 to 2023

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Jul-23	Job ID:	PFAS OMP
Facility Name:	RAAF Base Amberley	Constituent:	PFOA
Conducted By:	JR	Concentration Units:	ug/L

Sampling Point ID:	MW006	MW007	MW020	MW021	MW022	MW023	MW028
Sampling Event	Sampling Date	PFOA CONCENTRATION (ug/L)						
1	Feb-17	2.46	2					
2	Oct-17	1.95	1.09					
3	Feb-18							
4	Mar-18							
5	Apr-18							
6	Apr-19							
7	May-19	0.98	1.23	1.31	1.44	0.23	0.005	0.87
8	Nov-19	0.75	1.43	0.78	1.69	0.35	0.005	2.1
9	Apr-20	0.92	1.37	1.33	1.72	0.34	0.005	1.42
10	Oct-20	0.96	1.47	0.52	1.62	0.34	0.02	1.6
11	Apr-21	1.07	1.26	2.07	2.19	0.56	0.01	1.98
12	Oct-21	1	1.35	0.91	3.1	0.4	0.005	1.86
13	Apr-22	1.03	0.11	2.6	2.43	0.14	0.005	0.13
14	Oct-22	1.05	0.69	0.06	3.07	0.03	0.005	0.42
15	Apr-23	0.99	0.82	5.59	4.45	0.25	0.005	0.84
16								
17								
18								
19								
20								
Coefficient of Variation:		0.43	0.42	0.98	0.41	0.52	0.70	0.57
Mann-Kendall Statistic (S):		-3	-21	8	28	-7	-3	-10
Confidence Factor:		56.0%	94.0%	76.2%	99.9%	72.8%	58.0%	82.1%
Concentration Trend:		Stable	Prob. Decreasing	No Trend	Increasing	Stable	Stable	Stable



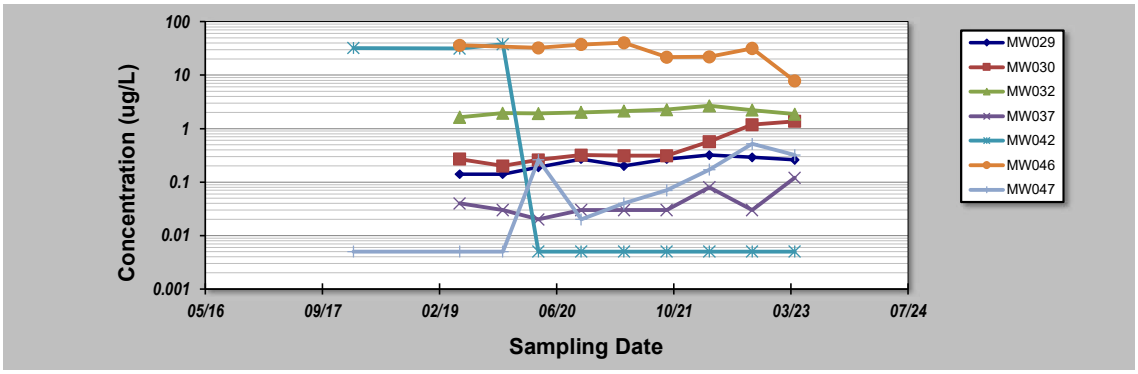
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Jul-23	Job ID:	PFAS OMP
Facility Name:	RAAF Base Amberley	Constituent:	PFOA
Conducted By:	JR	Concentration Units:	ug/L

Sampling Point ID:	MW029	MW030	MW032	MW037	MW042	MW046	MW047
Sampling Event	Sampling Date	PFOA CONCENTRATION (ug/L)						
1	Feb-17							
2	Oct-17							
3	Feb-18					32.3		0.005
4	Mar-18							
5	Apr-18							
6	Apr-19							
7	May-19	0.14	0.27	1.63	0.04	31.5	36	0.005
8	Nov-19	0.14	0.2	1.94	0.03	38		0.005
9	Apr-20	0.19	0.26	1.92	0.02	0.005	32.4	0.26
10	Oct-20	0.27	0.32	2.01	0.03	0.005	37.2	0.02
11	Apr-21	0.2	0.31	2.13	0.03	0.005	40.3	0.04
12	Oct-21	0.27	0.31	2.27	0.03	0.005	21.7	0.07
13	Apr-22	0.32	0.57	2.67	0.08	0.005	22.1	0.17
14	Oct-22	0.29	1.19	2.23	0.03	0.005	31.6	0.52
15	Apr-23	0.26	1.37	1.86	0.12	0.005	7.75	0.32
16								
17								
18								
19								
20								
Coefficient of Variation:		0.28	0.82	0.14	0.72	1.62	0.38	1.24
Mann-Kendall Statistic (S):		22	27	16	10	-20	-12	32
Confidence Factor:		98.8%	99.8%	94.0%	82.1%	95.5%	91.1%	99.9%
Concentration Trend:		Increasing	Increasing	Prob. Increasing	No Trend	Decreasing	Prob. Decreasing	Increasing



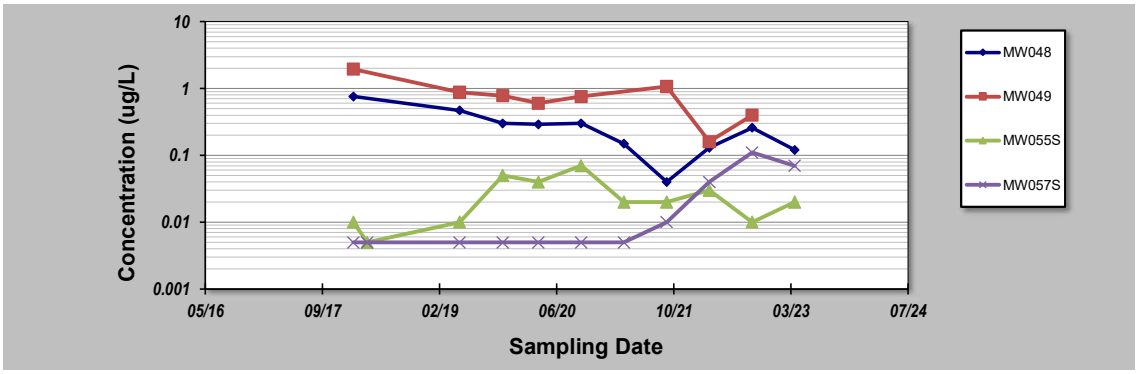
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Jul-23	Job ID:	PFAS OMP
Facility Name:	RAAF Base Amberley	Constituent:	PFOA
Conducted By:	JR	Concentration Units:	ug/L

Sampling Point ID:	MW048	MW049	MW055S	MW057S			
Sampling Event	Sampling Date	PFOA CONCENTRATION (ug/L)						
1	Feb-17							
2	Oct-17							
3	Feb-18	0.76	1.95	0.01	0.005			
4	Mar-18							
5	Apr-18			0.005	0.005			
6	Apr-19							
7	May-19	0.47	0.88	0.01	0.005			
8	Nov-19	0.3	0.78	0.05	0.005			
9	Apr-20	0.29	0.6	0.04	0.005			
10	Oct-20	0.3	0.76	0.07	0.005			
11	Apr-21	0.15		0.02	0.005			
12	Oct-21	0.04	1.07	0.02	0.01			
13	Apr-22	0.13	0.16	0.03	0.04			
14	Oct-22	0.26	0.4	0.01	0.11			
15	Apr-23	0.12		0.02	0.07			
16								
17								
18								
19								
20								
Coefficient of Variation:		0.74	0.65	0.78	1.47			
Mann-Kendall Statistic (S):		-32	-16	7	32			
Confidence Factor:		99.9%	96.9%	67.6%	99.4%			
Concentration Trend:		Decreasing	Decreasing	No Trend	Increasing			



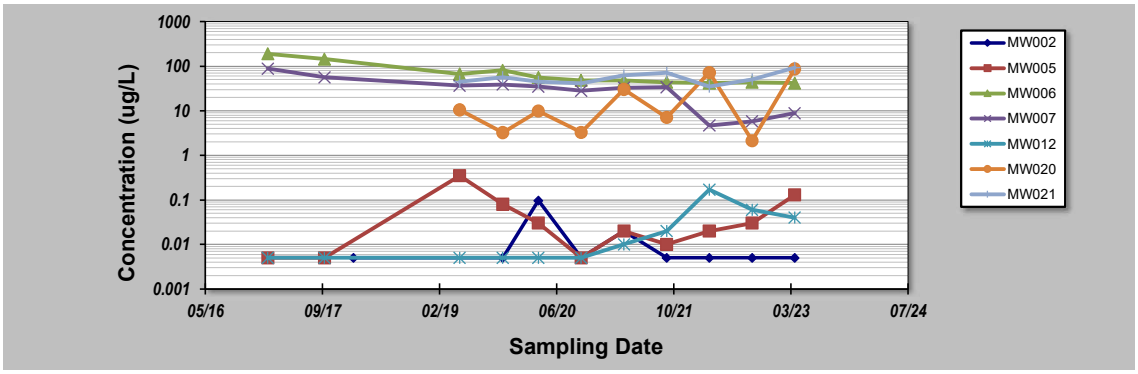
Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Jul-23	Job ID:	PFAS OMP
Facility Name:	RAAF Base Amberley	Constituent:	PFOS
Conducted By:	JR	Concentration Units:	ug/L

Sampling Point ID:	MW002	MW005	MW006	MW007	MW012	MW020	MW021
Sampling Event	Sampling Date	PFOS CONCENTRATION (ug/L)						
1	Feb-17		0.005	190	88.4	0.005		
2	Oct-17		0.005	144	56.7	0.005		
3	Feb-18	0.005						
4	Mar-18							
5	Apr-18							
6	Apr-19							
7	May-19		0.35	66.5	36.5	0.005	10.5	45
8	Nov-19	0.005	0.08	80.7	38.9	0.005	3.25	56.8
9	Apr-20	0.097	0.03	55.9	35.2	0.005	9.87	44.7
10	Oct-20	0.005	0.005	47.9	28	0.005	3.29	41.2
11	Apr-21	0.02	0.02	47.4	32.8	0.01	30.3	61.8
12	Oct-21	0.005	0.01	44	33.9	0.02	7.07	71.2
13	Apr-22	0.005	0.02	42	4.69	0.17	72.1	35
14	Oct-22	0.005	0.03	43.8	5.78	0.06	2.13	50.6
15	Apr-23	0.005	0.13	42	8.88	0.04	87.1	92.8
16								
17								
18								
19								
20								
Coefficient of Variation:		1.80	1.65	0.67	0.72	1.66	1.29	0.32
Mann-Kendall Statistic (S):		-5	12	-50	-41	34	8	8
Confidence Factor:		65.7%	79.9%	>99.9%	100.0%	99.6%	76.2%	76.2%
Concentration Trend:		No Trend	No Trend	Decreasing	Decreasing	Increasing	No Trend	No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
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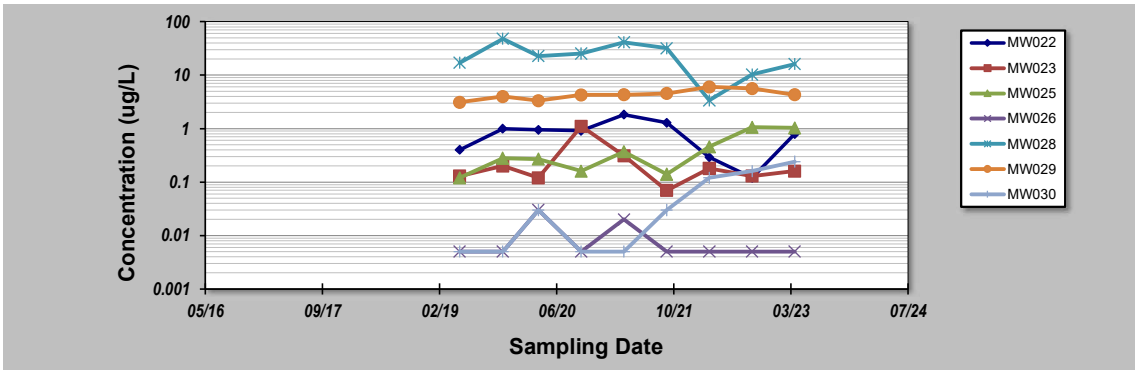
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Jul-23	Job ID:	PFAS OMP
Facility Name:	RAAF Base Amberley	Constituent:	PFOS
Conducted By:	JR	Concentration Units:	ug/L

Sampling Point ID:	MW022	MW023	MW025	MW026	MW028	MW029	MW030
Sampling Event	Sampling Date	PFOS CONCENTRATION (ug/L)						
1	Feb-17							
2	Oct-17							
3	Feb-18							
4	Mar-18							
5	Apr-18							
6	Apr-19							
7	May-19	0.4	0.13	0.12	0.005	17.1	3.12	0.005
8	Nov-19	1	0.2	0.28	0.005	48	3.98	0.005
9	Apr-20	0.95	0.12	0.27	0.03	22.9	3.33	0.03
10	Oct-20	0.91	1.11	0.16	0.005	25.4	4.25	0.005
11	Apr-21	1.83	0.31	0.37	0.02	41.2	4.29	0.005
12	Oct-21	1.29	0.07	0.14	0.005	32	4.53	0.03
13	Apr-22	0.29	0.18	0.46	0.005	3.37	6.04	0.12
14	Oct-22	0.12	0.13	1.06	0.005	10.3	5.63	0.16
15	Apr-23	0.79	0.16	1.03	0.005	16.2	4.29	0.24
16								
17								
18								
19								
20								
Coefficient of Variation:		0.63	1.21	0.84	0.97	0.60	0.22	1.29
Mann-Kendall Statistic (S):		-8	-3	20	-5	-10	25	25
Confidence Factor:		76.2%	58.0%	97.8%	65.7%	82.1%	99.6%	99.6%
Concentration Trend:		Stable	No Trend	Increasing	Stable	Stable	Increasing	Increasing



Notes:

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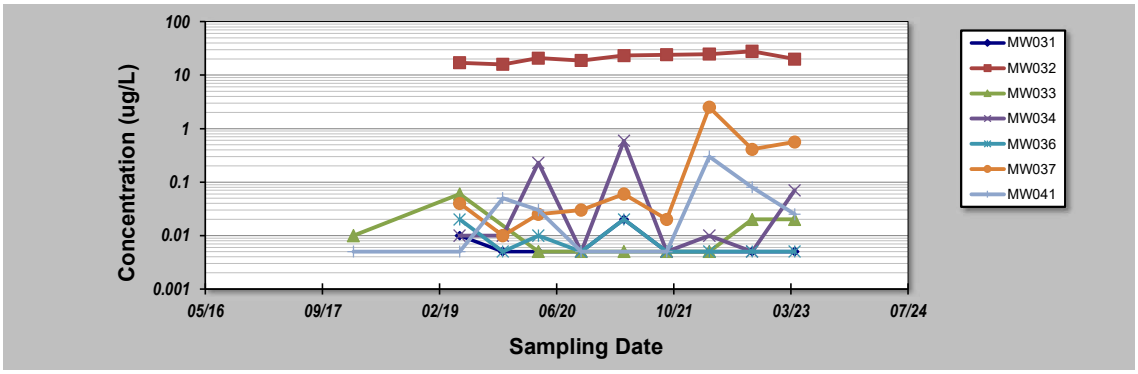
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Jul-23	Job ID:	PFAS OMP
Facility Name:	RAAF Base Amberley	Constituent:	PFOS
Conducted By:	JR	Concentration Units:	ug/L

Sampling Point ID:	MW031	MW032	MW033	MW034	MW036	MW037	MW041
Sampling Event	Sampling Date	PFOS CONCENTRATION (ug/L)						
1	Feb-17							
2	Oct-17							
3	Feb-18			0.01				0.005
4	Mar-18							
5	Apr-18							
6	Apr-19							
7	May-19	0.01	17	0.06	0.01	0.02	0.04	0.005
8	Nov-19	0.005	15.9		0.01	0.005	0.01	0.05
9	Apr-20	0.005	20.8	0.005	0.23	0.01	0.025	0.03
10	Oct-20	0.005	18.7	0.005	0.005	0.005	0.03	0.005
11	Apr-21	0.02	23.2	0.005	0.59	0.02	0.06	
12	Oct-21	0.005	24	0.005	0.005	0.005	0.02	0.005
13	Apr-22	0.005	24.6	0.005	0.01	0.005	2.51	0.3
14	Oct-22	0.005	27.9	0.02	0.005	0.005	0.41	0.08
15	Apr-23	0.005	19.9	0.02	0.07	0.005	0.56	0.025
16								
17								
18								
19								
20								
Coefficient of Variation:		0.70	0.18	1.20	1.89	0.73	2.00	1.69
Mann-Kendall Statistic (S):		-7	22	1	-2	-12	18	10
Confidence Factor:		72.8%	98.8%	50.0%	54.0%	87.0%	96.2%	82.1%
Concentration Trend:		Stable	Increasing	No Trend	No Trend	Stable	Increasing	No Trend



Notes:

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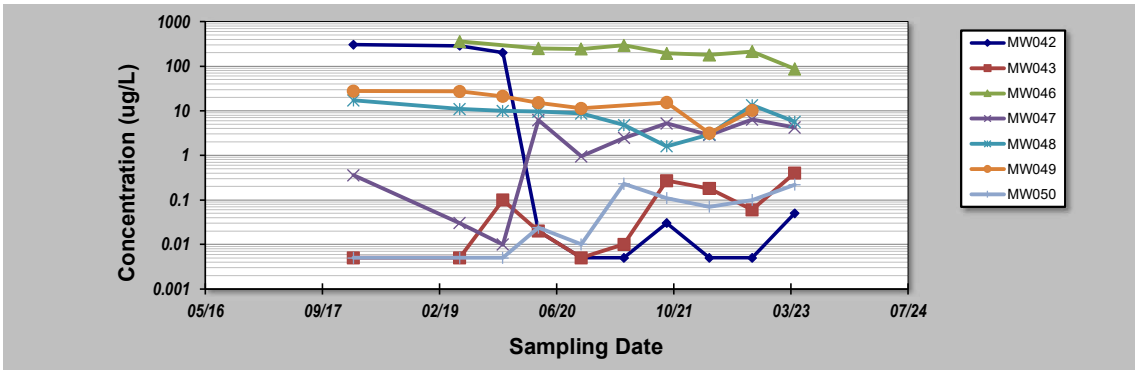
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Jul-23	Job ID:	PFAS OMP
Facility Name:	RAAF Base Amberley	Constituent:	PFOS
Conducted By:	JR	Concentration Units:	ug/L

Sampling Point ID:	MW042	MW043	MW046	MW047	MW048	MW049	MW050
Sampling Event	Sampling Date	PFOS CONCENTRATION (ug/L)						
1	Feb-17							
2	Oct-17							
3	Feb-18	305	0.005		0.36	17.1	27.7	0.005
4	Mar-18							
5	Apr-18							
6	Apr-19							
7	May-19	288	0.005	360	0.03	11	27.2	0.005
8	Nov-19	200	0.1		0.01	10	21.2	0.005
9	Apr-20	0.02	0.02	251	6.17	9.63	15.2	0.024
10	Oct-20	0.005	0.005	242	0.95	8.66	11.3	0.01
11	Apr-21	0.005	0.01	293	2.46	4.77		0.23
12	Oct-21	0.03	0.27	194	5.21	1.6	15.4	0.11
13	Apr-22	0.005	0.18	179	2.84	2.96	3.15	0.07
14	Oct-22	0.005	0.06	215	6.38	13.4	10.2	0.1
15	Apr-23	0.05	0.4	87.1	4.24	5.66		0.22
16								
17								
18								
19								
20								
Coefficient of Variation:		1.64	1.30	0.36	0.88	0.57	0.52	1.12
Mann-Kendall Statistic (S):		-21	24	-20	23	-23	-22	28
Confidence Factor:		96.4%	98.2%	99.3%	97.7%	97.7%	99.8%	99.4%
Concentration Trend:		Decreasing	Increasing	Decreasing	Increasing	Decreasing	Decreasing	Increasing



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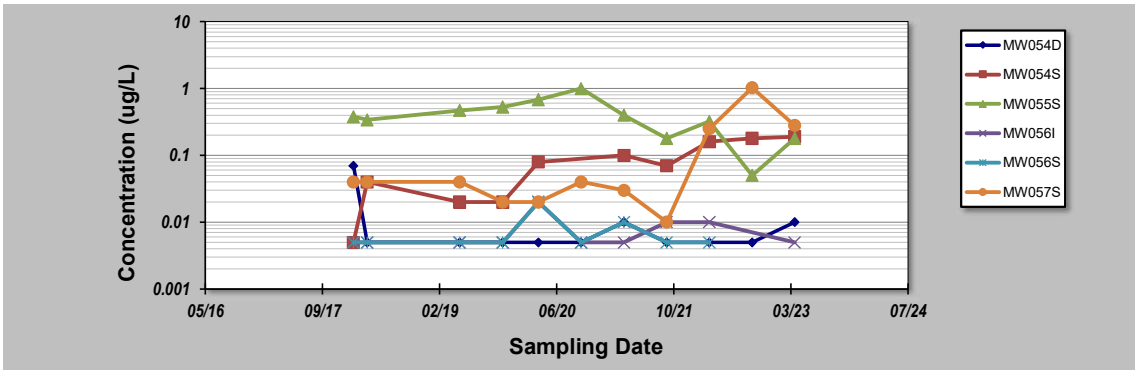
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Jul-23	Job ID:	PFAS OMP
Facility Name:	RAAF Base Amberley	Constituent:	PFOS
Conducted By:	JR	Concentration Units:	ug/L

Sampling Point ID:	MW054D	MW054S	MW055S	MW056I	MW056S	MW057S	
Sampling Event	Sampling Date	PFOS CONCENTRATION (ug/L)						
1	Feb-17							
2	Oct-17							
3	Feb-18	0.07	0.005	0.38	0.005	0.005	0.04	
4	Mar-18							
5	Apr-18	0.005	0.04	0.34	0.005	0.005	0.04	
6	Apr-19							
7	May-19	0.005	0.02	0.47	0.005	0.005	0.04	
8	Nov-19	0.005	0.02	0.53	0.005	0.005	0.02	
9	Apr-20	0.005	0.08	0.68	0.02	0.02	0.02	
10	Oct-20	0.005		1	0.005	0.005	0.04	
11	Apr-21	0.01	0.1	0.4	0.005	0.01	0.03	
12	Oct-21	0.005	0.07	0.18	0.01	0.005	0.01	
13	Apr-22	0.005	0.16	0.32	0.01	0.005	0.25	
14	Oct-22	0.005	0.18	0.05			1.03	
15	Apr-23	0.01	0.19	0.18	0.005		0.28	
16								
17								
18								
19								
20								
Coefficient of Variation:		1.64	0.80	0.64	0.65	0.70	1.85	
Mann-Kendall Statistic (S):		0	36	-18	9	3	12	
Confidence Factor:		45.1%	>99.9%	90.5%	75.8%	58.0%	79.9%	
Concentration Trend:		No Trend	Increasing	Prob. Decreasing	No Trend	No Trend	No Trend	



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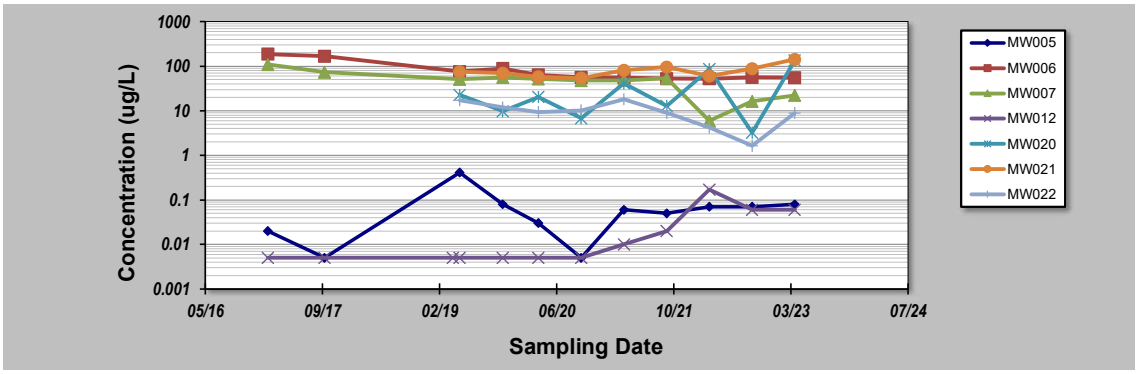
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Jul-23	Job ID:	PFAS OMP
Facility Name:	RAAF Base Amberley	Constituent:	Sum of PFHxS and PFOS
Conducted By:	JR	Concentration Units:	ug/L

Sampling Point ID:		MW005	MW006	MW007	MW012	MW020	MW021	MW022
Sampling Event	Sampling Date	SUM OF PFHXS AND PFOS CONCENTRATION (ug/L)						
1	Feb-17	0.02	187	109	0.005			
2	Oct-17	0.005	167	73.3	0.005			
3	Feb-18							
4	Mar-18							
5	Apr-18							
6	Apr-19				0.005			
7	May-19	0.41	76.1	51.2	0.005	22.7	75.3	17.3
8	Nov-19	0.08	88.8	56.1	0.005	9.76	70.1	11.9
9	Apr-20	0.03	64.2	51.8	0.005	20.5	57.8	9.31
10	Oct-20	0.005	56.3	47.7	0.005	6.82	53.9	10.2
11	Apr-21	0.06	55.1	48.4	0.01	40.9	81.3	18.1
12	Oct-21	0.05	52.7	53.4	0.02	12.8	95.6	9.01
13	Apr-22	0.07	52.5	5.95	0.17	85.9	59.9	4.24
14	Oct-22	0.07	56.7	16.4	0.06	3.25	88	1.64
15	Apr-23	0.08	55.2	22.2	0.06	134	142	8.95
16								
17								
18								
19								
20								
Coefficient of Variation:		1.41	0.58	0.58	1.65	1.18	0.34	0.53
Mann-Kendall Statistic (S):		16	-39	-35	40	6	14	-22
Confidence Factor:		87.5%	99.9%	99.7%	99.7%	69.4%	91.0%	98.8%
Concentration Trend:		No Trend	Decreasing	Decreasing	Increasing	No Trend	Prob. Increasing	Decreasing



Notes:

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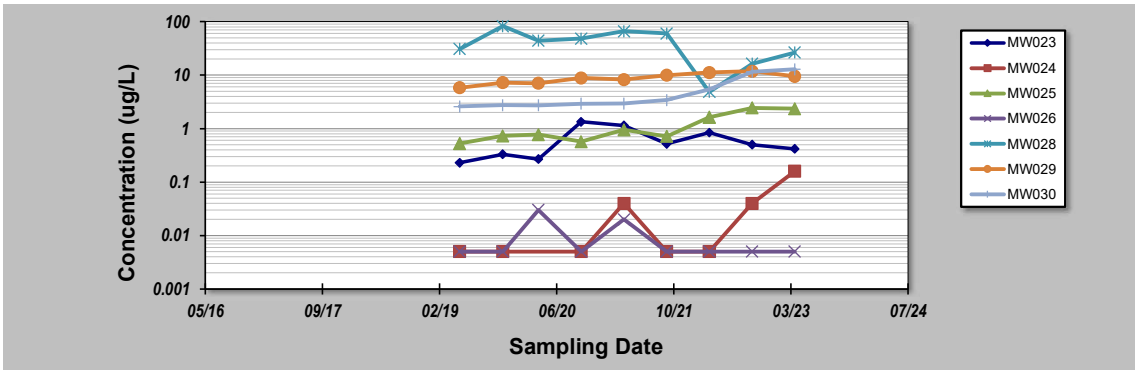
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Jul-23	Job ID:	PFAS OMP
Facility Name:	RAAF Base Amberley	Constituent:	Sum of PFHxS and PFOS
Conducted By:	JR	Concentration Units:	ug/L

Sampling Point ID:	MW023	MW024	MW025	MW026	MW028	MW029	MW030
Sampling Event	Sampling Date	SUM OF PFHXS AND PFOS CONCENTRATION (ug/L)						
1	Feb-17							
2	Oct-17							
3	Feb-18							
4	Mar-18							
5	Apr-18							
6	Apr-19							
7	May-19	0.23	0.005	0.53	0.005	30.7	5.79	2.59
8	Nov-19	0.33	0.005	0.73	0.005	83	7.24	2.75
9	Apr-20	0.27		0.77	0.03	44.2	7.05	2.72
10	Oct-20	1.34	0.005	0.57	0.005	48.1	8.91	2.91
11	Apr-21	1.15	0.04	0.95	0.02	66.5	8.27	2.96
12	Oct-21	0.52	0.005	0.72	0.005	60.1	9.92	3.41
13	Apr-22	0.84	0.005	1.63	0.005	4.87	11.2	5.43
14	Oct-22	0.5	0.04	2.44	0.005	16.3	11.8	11.6
15	Apr-23	0.42	0.16	2.37	0.005	26.4	9.56	12.9
16								
17								
18								
19								
20								
Coefficient of Variation:		0.64	1.62	0.64	0.97	0.60	0.22	0.78
Mann-Kendall Statistic (S):		6	13	24	-5	-10	26	34
Confidence Factor:		69.4%	92.9%	99.4%	65.7%	82.1%	99.7%	>99.9%
Concentration Trend:		No Trend	Prob. Increasing	Increasing	Stable	Stable	Increasing	Increasing



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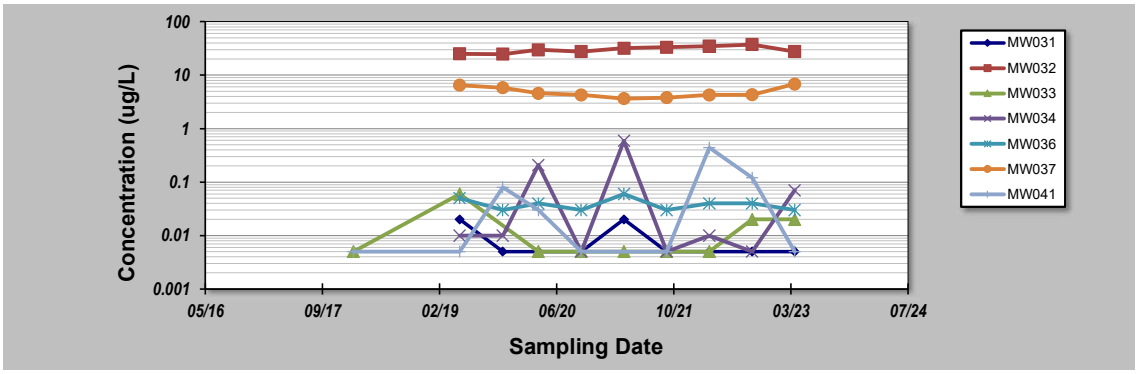
GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Jul-23	Job ID:	PFAS OMP
Facility Name:	RAAF Base Amberley	Constituent:	Sum of PFHxS and PFOS
Conducted By:	JR	Concentration Units:	ug/L

Sampling Point ID:	MW031	MW032	MW033	MW034	MW036	MW037	MW041
Sampling Event	Sampling Date	SUM OF PFHXS AND PFOS CONCENTRATION (ug/L)						
1	Feb-17							
2	Oct-17							
3	Feb-18			0.005				0.005
4	Mar-18							
5	Apr-18							
6	Apr-19							
7	May-19	0.02	25.1	0.06	0.01	0.05	6.54	0.005
8	Nov-19	0.005	24.8		0.01	0.03	5.82	0.08
9	Apr-20	0.005	29.8	0.005	0.21	0.04	4.6	0.03
10	Oct-20	0.005	27.6	0.005	0.005	0.03	4.28	0.005
11	Apr-21	0.02	31.8	0.005	0.59	0.06	3.63	
12	Oct-21	0.005	33.2	0.005	0.005	0.03	3.8	0.005
13	Apr-22	0.005	34.8	0.005	0.01	0.04	4.26	0.44
14	Oct-22	0.005	37.4	0.02	0.005	0.04	4.32	0.12
15	Apr-23	0.005	27.8	0.02	0.07	0.03	6.82	0.005
16								
17								
18								
19								
20								
Coefficient of Variation:		0.79	0.14	1.27	1.92	0.27	0.24	1.84
Mann-Kendall Statistic (S):		-8	22	6	-2	-5	-6	6
Confidence Factor:		76.2%	98.8%	69.4%	54.0%	65.7%	69.4%	69.4%
Concentration Trend:		Stable	Increasing	No Trend	No Trend	Stable	Stable	No Trend



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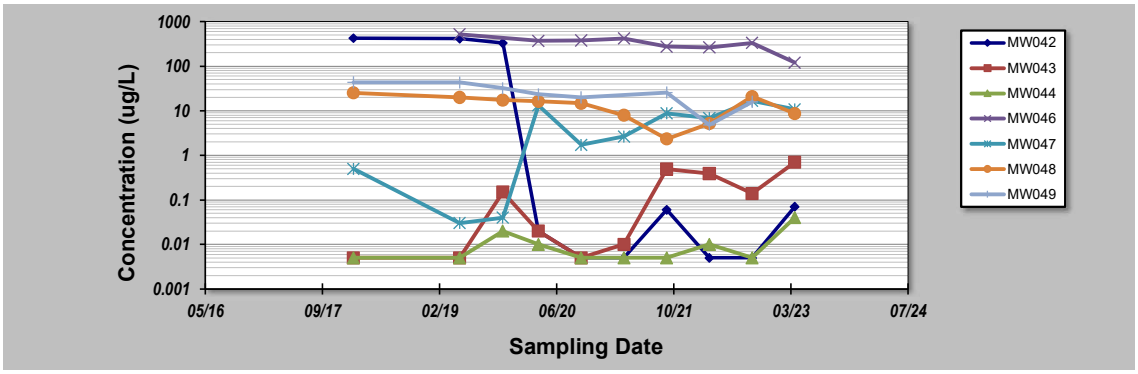
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Jul-23	Job ID:	PFAS OMP
Facility Name:	RAAF Base Amberley	Constituent:	Sum of PFHxS and PFOS
Conducted By:	JR	Concentration Units:	ug/L

Sampling Point ID:	MW042	MW043	MW044	MW046	MW047	MW048	MW049
Sampling Event	Sampling Date	SUM OF PFHXS AND PFOS CONCENTRATION (ug/L)						
1	Feb-17							
2	Oct-17							
3	Feb-18	424	0.005	0.005		0.5	25.3	43.7
4	Mar-18							
5	Apr-18							
6	Apr-19							
7	May-19	417	0.005	0.005	520	0.03	20	43.5
8	Nov-19	330	0.15	0.02		0.04	17.5	32.2
9	Apr-20	0.02	0.02	0.01	373	13.2	16.4	23.5
10	Oct-20	0.005	0.005	0.005	381	1.71	14.7	20.1
11	Apr-21	0.005	0.01	0.005	420	2.64	7.99	
12	Oct-21	0.06	0.49	0.005	277	8.79	2.34	25.9
13	Apr-22	0.005	0.39	0.01	264	6.85	5.15	4.83
14	Oct-22	0.005	0.14	0.005	335	16.7	20.9	15.9
15	Apr-23	0.07	0.7	0.04	121	10.8	8.63	
16								
17								
18								
19								
20								
Coefficient of Variation:		1.62	1.30	1.02	0.35	0.99	0.54	0.51
Mann-Kendall Statistic (S):		-21	24	7	-18	27	-23	-22
Confidence Factor:		96.4%	98.2%	70.0%	98.4%	99.2%	97.7%	99.8%
Concentration Trend:		Decreasing	Increasing	No Trend	Decreasing	Increasing	Decreasing	Decreasing



Notes:

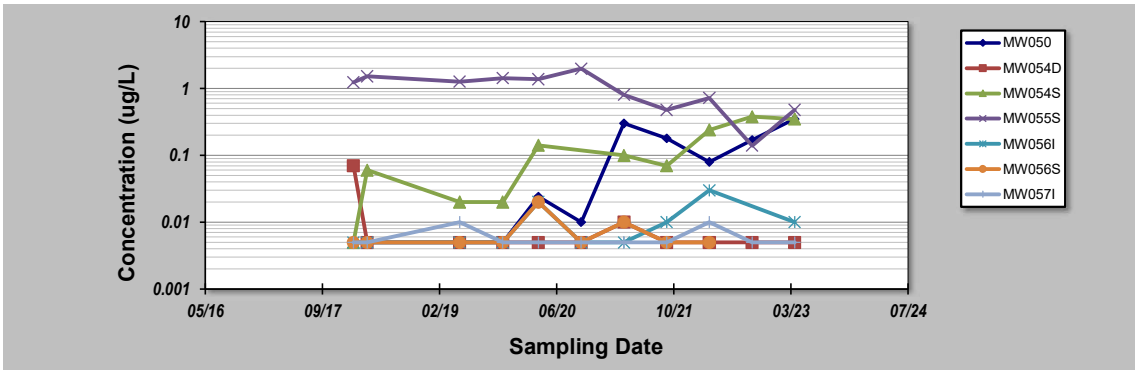
1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date: 25-Jul-23
Facility Name: RAAF Base Amberley
Conducted By: JR

Job ID: PFAS OMP
Constituent: Sum of PFHxS and PFOS
Concentration Units: ug/L

Sampling Point ID:	MW050	MW054D	MW054S	MW055S	MW056I	MW056S	MW057I
Sampling Event	Sampling Date	SUM OF PFHXS AND PFOS CONCENTRATION (ug/L)						
1	Feb-17							
2	Oct-17							
3	Feb-18	0.005	0.07	0.005	1.24	0.005	0.005	0.005
4	Mar-18							
5	Apr-18		0.005	0.06	1.52	0.005	0.005	0.005
6	Apr-19							
7	May-19	0.005	0.005	0.02	1.27	0.005	0.005	0.01
8	Nov-19	0.005	0.005	0.02	1.43	0.005	0.005	0.005
9	Apr-20	0.024	0.005	0.141	1.38	0.02	0.02	0.005
10	Oct-20	0.01	0.005		1.98	0.005	0.005	0.005
11	Apr-21	0.3	0.01	0.1	0.81	0.005	0.01	0.005
12	Oct-21	0.18	0.005	0.07	0.48	0.01	0.005	0.005
13	Apr-22	0.08	0.005	0.24	0.72	0.03	0.005	0.01
14	Oct-22	0.17	0.005	0.38	0.14			0.005
15	Apr-23	0.35	0.005	0.35	0.48	0.01		0.005
16								
17								
18								
19								
20								
Coefficient of Variation:		1.16	1.72	1.00	0.53	0.85	0.70	0.34
Mann-Kendall Statistic (S):		30	-9	32	-28	19	3	0
Confidence Factor:		99.7%	72.9%	99.9%	98.4%	94.6%	58.0%	45.1%
Concentration Trend:		Increasing	No Trend	Increasing	Decreasing	Prob. Increasing	No Trend	Stable



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
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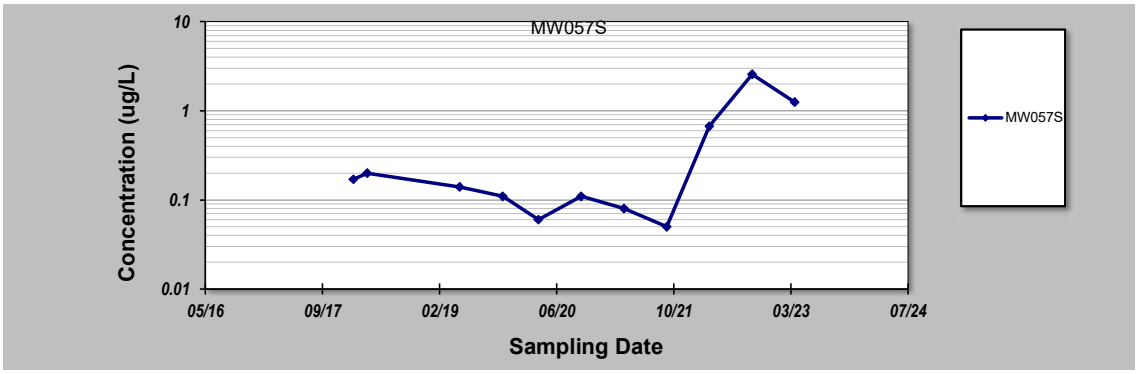
3. Methodology based on "MAROS: A Decision Support System for Optimizing Monitoring Plans", J.J. Aziz, M. Ling, H.S. Rifai, C.J. Newell, and J.R. Gonzales, *Ground Water*, 41(3):355-367, 2003.

GSI MANN-KENDALL TOOLKIT
for Constituent Trend Analysis

Evaluation Date:	25-Jul-23	Job ID:	PFAS OMP
Facility Name:	RAAF Base Amberley	Constituent:	Sum of PFHxS and PFOS
Conducted By:	JR	Concentration Units:	ug/L

Sampling Point ID: MW057S

Sampling Event	Sampling Date	SUM OF PFHXS AND PFOS CONCENTRATION (ug/L)
1	Feb-17	
2	Oct-17	
3	Feb-18	0.17
4	Mar-18	
5	Apr-18	0.2
6	Apr-19	
7	May-19	0.14
8	Nov-19	0.11
9	Apr-20	0.06
10	Oct-20	0.11
11	Apr-21	0.08
12	Oct-21	0.05
13	Apr-22	0.67
14	Oct-22	2.57
15	Apr-23	1.25
16		
17		
18		
19		
20		
Coefficient of Variation:		1.59
Mann-Kendall Statistic (S):		4
Confidence Factor:		59.0%
Concentration Trend:		No Trend



Notes:

1. At least four independent sampling events per well are required for calculating the trend. *Methodology is valid for 4 to 40 samples.*
2. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0): >95% = Increasing or Decreasing; ≥ 90% = Probably Increasing or Probably Decreasing; < 90% and S>0 = No Trend; < 90%, S≤0, and COV ≥ 1 = No Trend; < 90% and COV < 1 = Stable.
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Appendix E

SAQPs

Prepared for
Department of Defence
ABN: 68 706 814 312

AECOM

PFAS OMP- RAAF Base Amberley Sampling and Analysis Quality Plan

22-Mar-2023
Doc No. 60612563_PL_006_7_230322

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Delivering a better world

PFAS OMP- RAAF Base Amberley Sampling and Analysis Quality Plan

Client: Department of Defence

ABN: 68 706 814 312

Prepared by

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22-Mar-2023

Job No.: 60612563

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Quality Information

Document PFAS OMP- RAAF Base Amberley Sampling and Analysis Quality Plan

Ref 60612563

Date 22-Mar-2023

Prepared by [redacted]

Reviewed by [redacted]

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	02 April 2020	Draft	[redacted] Project Manager	
0	08-Apr-2020	Final	[redacted] Project Manager	
1	19-Feb-2021	Final	[redacted] Project Manager	
2	08-Mar-2021	Final	[redacted] Project Manager	
3	03-Mar-2022	Final	[redacted] Project Manager	
4	17-Mar-2022	Final	[redacted] Project Manager	
5	26-Sep-2022	Final	[redacted] Project Manager	
6	02-Mar-2023	Final	[redacted] Project Manager	
7	22-Mar-2023	Final	[redacted] Project Manager	[redacted]

Table of Contents

1.0 Introduction

1.1 Preamble

AECOM Australia Pty Ltd (AECOM) has prepared this Sampling and Analysis Quality Plan (SAQP) for the per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Plan (OMP) at RAAF Base Amberley (the Base) in the South Queensland Region.

The SAQP supports the PFAS OMP which was included in the Royal Australian Air Force (RAAF) Base Amberley PFAS Management Area Plan (PMAP) (Defence, 2020a), here-in referred to as the OMP.

The purpose of the OMP program is to collect data that will enable Defence to maintain an up-to-date understanding of the distribution, concentration and transport (migration pathways and flow) of PFAS at the RAAF Base Amberley Management Area. The data will assist in the timely identification of risks and inform Defence's approach to the management of PFAS, including updates and revisions to the PMAP.

1.2 SAQP Objectives

The objectives of this SAQP are to:

- Define the proposed scope of works in detail.
- Outline the proposed sampling methodology to be adopted.
- Outline the proposed data quality assurance and quality control (QA/QC) measures to be adopted.
- Define the data collection requirements for the project.

1.3 Scope of Works

To meet the project objectives, the following scope of works are proposed as per the OMP (Defence, 2020a):

- Sampling biannually (April 2020, October 2020, April 2021, October 2021, April 2022, October 2022, April 2023, October 2023, April 2024) at:
    - 40 groundwater monitoring wells.
    - 49 co-located surface water (where present) and sediment sampling locations.

  Preparation of reports including a sampling event factual report (following each biannual sampling event) and annual interpretive reports following the completion of each 12-month sampling period.

Since the OMP was issued in 2020 there have been some minor changes in the number of groundwater sampling locations due on-site monitoring wells being destroyed. **Section 4.3.2** to **Section 4.3.4** provides the updated list of sampling locations.

1.4 Guidelines and Legislation

The SAQP has been developed with reference to the following guidelines and legislation:

- PFAS National Environmental Management Plan (NEMP), Heads of Environmental Protection Agencies (HEPA), version 2.0, 2020.
- National Environment Protection (Assessment of Site Contamination) Measure (NEPM), National Environment Protection Council (NEPC), 2013.
- Department of Defence, Routine Environment Water Quality Monitoring Manual, 2016.
- Department of Defence, Contamination Management Manual (DCMM), 2018 amended 2021.

- Department of Health (DoH), Health Based Guidance Values for PFAS for use in site investigations in Australia, 2019.
- National Health and Medical Research Council (NHMRC), Guidance on PFAS in Recreational Water, August 2019.
- Standards Australia 1998. AS/NZ 5667:1998 Water Quality – Sampling.
- Australian and New Zealand Guidelines, 2018. Australian and New Zealand Guidelines for Fresh and Marine Water Quality.
- Environmental Protection Policy (Water and Wetland Biodiversity), 2019.

2.0 Site Identification and Conceptual Site Model

2.1 RAAF Base Amberley

The Base is the largest operational air force base in the Defence estate with over 7,000 personnel. It is located 7 kilometres (km) west of Ipswich and 50 km southwest of Brisbane. The facility is approximately 2,030 ha in area and includes the Base itself as well as several parcels of Defence-owned land to the east and south of the Base.

The Base operates two runways. The main runway runs approximately north to south, parallel to the eastern boundary. The second runway is shorter and runs southwest to northeast and is located in the southern part of the Base. Parallel to the main runway is a taxiway that services both runways and provides access to the main hangars. The majority of the operational areas, historical, current and 'planned for the future' are located to the west of the runways and taxiways.

2.2 RAAF Base Amberley Management Area

The RAAF Base Amberley Management Area is identified in the PMAP (Defence, 2020a) and has identified risks of exposure to PFAS that require management by Defence, refer to **Figure 1** in **Appendix A**. The extent of the Management Area is the geographical boundaries of the Base. Within this area there are specific PFAS source areas identified as contributing most significantly towards elevated risks that require management. The confirmed primary source areas (CPSA) relevant to this OMP include:

- CPSA A – Former topside aviation fire training area (FTA) and current FTA pad.
- CPSA B – Hangar 410 (Building 410) and former landfill.
- CPSA C – Frogs Hollow former fire training school.
- CPSA D – Sewage treatment plant.
- CPSA E – Historical containment pond.
- CPSA G – Former FTA and operational testing area.
- CPSA J – Former FTA and operational testing area.
- CPSA L – Potential former FTA and operations testing area.
- CPSA M – Former fuel farm 1 and triple interceptor pit.
- CPSA T – Potential location of aircraft F4E incident.
- CPSA V – AFFF wastewater holding tank.
- CPSA W – Fire fighting training school.
- CPSA X – Former structural and open pit FTA.
- CPSA Y – Former secondary FTA.
- CPSA Z – Fuel UST with AFFF listing.
- CPSA AA – Triple interceptor pit at Engine Test Cell facilities 1 and 2.
- CPSA BB – Areas used for irrigation- former grassed runways.
- CPSA CC – Former landfill.
- CPSA DD – HS748 Former fire training area on disused runway.

2.3 Conceptual Site Model

The conceptual site model (CSM) for RAAF Base Amberley is presented in detail in the detailed site investigation (DSI) (CH2M Hill, 2018[1]) which summarises the linkages between sources, pathways and receptors. The CSM is reviewed annually, as part of the annual interpretive report (AIR). The most recent AIR was the 2021 AIR, which was issued in February 2023 (AECOM, 2023).

[1] CH2M Hill, 2018, RAAF Base Amberley PFAS Investigation – Detailed Site Investigation, Rev. 6, November 2018.

3.0 Data Quality Assessment

3.1 Data Quality Objectives

The amended NEPM, Schedule B [2] Guideline on Site Characterisation (2013) specifies that the nature and quality of the data produced in an investigation will be determined by the Data Quality Objectives (DQOs). As referenced by the NEPM, the DQO process is detailed in the United States Environmental Protection Agency (US EPA) *Guidance on Systematic Planning Using the Data Quality Objectives Process (EPA QA/G-4 EPA/240/B-06/001), February 2006.*

The US EPA defines the process as *'a strategic planning approach based on the Scientific Method that is used to prepare for a data collection activity. It provides a systematic procedure for defining the criteria that a data collection design should satisfy, including when to collect samples, where to collect samples, the tolerable level of decision errors for the study, and how many samples to collect'.*

The process of establishing appropriate DQOs is defined according to the following seven steps:

Table 1 The seven steps in defining DQOs

Step	Data Quality Objective Step
1	***State the problem*** – Define the problem that necessitates the study; identify the planning team, examine budget, schedule.
2	***Identify the goal of the study*** – State how environmental data will be used in meeting objectives and solving the problem, identify study questions, define alternative outcomes.
3	***Identify information inputs*** – Identify data and information needed to answer study questions.
4	***Define the boundaries of the study*** – Specify the target population and characteristics of interest, define spatial and temporal limits, scale of inference.
5	***Develop the analytic approach*** – Define the parameter of interest, specify the type of inference, and develop the logic for drawing conclusions from findings.
6	***Specify performance or acceptance criteria*** – Develop performance criteria for new data being collected or acceptable criteria for existing data being considered for use.
7	***Develop the plan for obtaining data*** – Select the resource-effective sampling and analysis plan that meets the performance criteria.

The approach adopted relative to the seven steps presented above is discussed below. This incorporates the DQO information presented in the PMAP (Defence, 2020a).

3.1.1 Step 1 – State the Problem

PFAS source zones in soil and groundwater at the Base are contributing to PFAS discharges in surface water and drains from the Base. These discharges present elevated risks to human health and the environment.

Actions will be implemented to reduce these discharges and provide precautionary advice to the community in order to limit exposures. Monitoring is needed to assess the effectiveness of these actions, and to enable informed risk management decisions to protect human health and the environment.

Monitoring will also provide data to evaluate temporal variability and seasonal influence in PFAS concentrations in groundwater and surface water / sediment on- and off-base. This will facilitate refinement of the CSM, allow update of the human health and ecological risk assessment and inform management decisions by Defence and government agencies.

3.1.2 Step 2 – Identify the Goal of the Study

The overall goal of the study is to establish a systematic routine groundwater and surface water / sediment sampling and analysis program to provide current and ongoing information on the distribution and migration of PFAS contaminants of potential concern in groundwater and surface water / sediment in the RAAF Base Amberley Management Area.

Specific goals of the program are to:

- Understand the changes and trends in the nature, extent and magnitude of PFAS concentrations in the groundwater, surface water and sediment within RAAF Base Amberley Management Area to further refine the understanding of the distribution and variability of PFAS in the environment.
- Understand if the nature, extent and magnitude of PFAS concentrations has changed significantly due to management actions and other conditions to warrant a revision to the human health and environmental risk assessments.
- Provide an early warning as PFAS impacted surface water and groundwater migrates off-Base and discharges to surface water in the Bremer River and Warrill Creek.
- Collect additional data to inform future management actions and potential refinement of the RAAF Base Amberley CSM for PFAS.
- Monitor PFAS concentrations in Warrill Creek and in groundwater south of the Base, before and after construction and commissioning of the proposed new sewage treatment plant (STP), which will be designed to extract PFAS from effluent before it is discharged to the watercourse.
- Assess temporal and seasonal variation in the nature and extent of PFAS at the Base.

3.1.3 Step 3 – Identify Information Inputs

To allow assessment of the data against the study goals listed in Step 2 above, the following inputs will be considered:

- Physical site setting.
- Meteorological data including rainfall.
- Previous and new data relevant to PFAS in soil, waters and biota obtained through the detailed site investigation (DSI) (CH2M Hill, 2018).
- Location and types of human and environmental receptors as defined in the DSI CH2M Hill, 2018).
- Surface water and groundwater flow regimes identified in the DSI CH2M Hill, 2018)and its CSM, and further refined as part of the 2019 monitoring events (CH2M Hill, 2019).
- Groundwater, surface water and sediment data collected and analysed for PFAS, per the SAQP.
- Groundwater and surface water elevation data.
- Field observations.
- Advances in laboratory analytical approaches and changes in regulatory requirements.
- Adopted assessment criteria for groundwater, sediment and surface water.

3.1.4 Step 4 – Define the Boundaries of the Study

The spatial and temporal boundaries that apply for data collection are detailed below and will influence the decision-making process for ongoing monitoring:

- The spatial boundary for data collection and decision making is the RAAF Base Amberley Management Area (refer to **Appendix A**), in particular the key surface water drainage pathways and groundwater between the Base and the Bremer River and Warrill Creek.
    - Surface water and sediment sampling will focus on discharges from the Base to the north east of the Base into the Bremer River and to the south of the Base into Frogs Hollow and Warrill Creek.

- Surface water and sediment sampling is also proposed upstream of the Base in both the Bremer River and Warrill Creek to monitor for potential transport of PFAS into the Management Area, from upstream polluters to the river and the creek.
- For groundwater, on-Base sampling will include wells screened in the Alluvium-Tertiary formations (shown to be relatively well connected and can be treated as one hydrogeological unit) and the Walloon Coal Measures.
- The off-Base sampling will focus on nested wells installed on public land that will monitor hydraulic migration of PFAS to the east and the nested pairs will allow monitoring of vertical migration between hydrogeological units. Nested wells to the south of the Base on State Government owned land (and privately leased) have also been included. Groundwater on this property is used for stock watering and the human health risk assessment (HHRA) has indicated elevated human health risk for consumption of home slaughtered beef on properties to the south of the Base.

- The sampling completed as part of the SAQP includes groundwater, surface water and sediment, at the frequencies defined in **Section 4**. In addition, ad hoc sampling for biota may also be required if changes in PFAS concentration in sediment indicate the need for assessment of the risk to biota.
- The requirements for long term monitoring (beyond three years) will be determined in the OMP review following the initial implementation period.

The SAQP will also cover the initial implementation period (two years) of the OMP (Defence, 2020a). The SAQP will also cover the extended implementation period to the extent required by specific characteristics of the Base and surrounds, and behaviour of the plume, measured against specified data trends.

3.1.5 Step 5 – Develop the Analytical Approach

The decision rules can be defined as:

- Analytical selection; all samples will be analysed for the extended PFAS suite.
- Analytical method selection for PFAS is based on achieving appropriate laboratory limits of reporting (LOR) in the various media to be analysed. Standard LOR will be used for the OMP Implementation.
- Sample locations have been selected with the objective of monitoring PFAS trends (temporal and seasonal), providing early warning of changes in the migration of PFAS in surface water and groundwater.
- If the laboratory QA/QC data are within the acceptable ranges, the data will be considered suitable for use.
- If PFAS concentrations are reported above the laboratory LOR, where it was previously <LOR, then it will be considered whether further assessment of the data will be required.
- If the PFAS is reported at a concentration that is above drinking water guideline in groundwater, then it will be considered that further assessment is required and / or notification.
- If the PFAS is reported at a concentration that is inside a trigger value or acceptable range, then it will be considered whether monitoring is continued or reduced, this assessment will be undertaken after two years of monitoring.
- If the data indicate a change to the risks defined in the DSI, human health risk assessment (HHRA) and ecological risk assessment (ERA), this may warrant further consideration, potentially via further investigation and review of the OMP.
- If the data does not conform with the CSM as outlined in the PMAP, this may warrant further consideration, potentially via further investigation and review of the OMP.

The decision on the acceptance of the analytical data will be made on the basis of the DQIs as follows:

- **Precision:** A quantitative measure of the variability (or reproducibility) of data.
- **Accuracy**: A quantitative measure of the closeness of reported data to the “true” value.

- **Representativeness**: The confidence (expressed qualitatively) that data are representative of each media present on site.
- **Completeness**: A measure of the amount of useable data from a data collection activity.
- **Comparability**: The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event.

If the DQIs indicates the data to be suitable, then monitoring should be continued as per the OMP. If not, then a revision to the OMP should be undertaken, refer to **Section 3.2** for further details.

3.1.6 Step 6 – Specify Performance or Acceptance Criteria

Specific limits for the works included in the OMP (Defence, 2020a) are in accordance with the appropriate guidance made or endorsed by state and national regulations, appropriate indicators of data quality, and standard procedures for field sampling and handling.

It is expected that the most up-to-date investigation criteria endorsed by state and national regulations will be used to determine if data collected as part of the OMP indicates a change in the risk to human health or environmental receptors.

This step also examines the certainty of conclusive statements based on the available new data collected. This should include the following points to quantify tolerable limits:

- A decision can be made based on a certainty assumption of 95% confidence in any given data set. A limit on the decision error will be 5% that a conclusive statement may be a false positive or false negative.
- A decision error in the context of the decision rule presented above would lead to either underestimation or overestimation of the risk level associated with a particular sampling area.
- Sampling errors may occur when the sampling program does not adequately detect the variability of a contaminant from point to point across the site. To address this, the OMP outlines minimum numbers of samples proposed to be collected from each media.
- As such, there may be limitations in the data if aspects of the OMP cannot be implemented. Some examples of this scenario include but are not limited to:
    - Proposed surface water sample locations may be dry at the time of sampling
    - Proposed groundwater well locations are damaged or destroyed and therefore cannot be sampled
    - Proposed samples are not collected due to access being restricted to a given location.
- Limitations in ability to acquire useful and representative information from the data collected. The data are proposed to be collected from multiple locations and sample media. Some examples of this scenario include:
    - Some of the data are proposed to be collected from landholder bores, which are not purpose-built for groundwater monitoring. In some cases, there is limited information on the bore construction, and the likely presence of dedicated pumps or windmills may prevent groundwater depths being accurately recorded while also preventing groundwater being sampled using low flow techniques.
- Measurement errors can occur during sample collection, handling, preparation, analysis and data reduction. To address this the following measures are proposed:
    - Collection of sufficient sample mass to facilitate analysis reported to standard laboratory detections limits. Collection of insufficient sample mass may result in raised detection limits.
    - Field staff to follow a standard procedure when collecting samples, including decontamination of tools, and use of appropriate sample containers and preservation methods.
    - Laboratories to follow a standard procedure when preparing samples for analysis and undertaking analysis.
    - Laboratories to report QA/QC data for comparison with the DQIs established for the SAQP.

As data are collected for the OMP, an analysis of trends will be undertaken with potential outliers identified. This analysis will include data collected as part of the DSI, HHRA and ERA as well as consideration of whether the data is reasonable in relation to the CSM. As more time series data is collected, a statistical approach to determining acceptance criteria may become possible, refer to **Section 3.2** for acceptance criteria for data quality.

3.1.7 Step 7 – Optimise the Design for Obtaining Data

The methodology presented in this SAQP is designed to meet the project objectives described in **Section 1.2** and to achieve the nominated DQOs. Optimisation of the data collection process will be achieved by:

- Working closely with the analytical laboratories and sampling equipment suppliers to ensure that appropriate procedures and processes are developed and implemented prior to and during the fieldwork, to ensure that sample handling, and transport to and processing by the analytical laboratories is appropriate.
- Conducting sampling according to Defence and Australian Standards for the type of sampling being conducted (i.e. groundwater monitoring well sampling versus landholder bore water sampling). These standards are as follows:
  - Department of Defence, DCMM, (July 2018, Amended August 2019).
  - Standards Australia (AS/NZS5667.11–1998) *Water Quality – Sampling, part 11: Guidance on sampling of groundwater.*
  - Standards Australia (AS 4482.1-2005) *Guide to the sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds.*
  - Standards Australia (AS 4482.2-1999) *Guide to the sampling and investigation of potentially contaminated soil, Part 2: Volatile Substances.*
- Conducting sampling in accordance with AECOM's internal PFAS Sample Collection Guidance.
- Sampling conducted by suitably qualified and experienced field staff.
- Basing the sampling upon a CSM developed using the information available at the implementation of the SAQP. Updating the CSM as new data becomes available in the course of the implementation of the SAQP, as required.
- Progressive review of the data throughout the initial three-year OMP period and modification of sampling programs to optimise the value of data generated.

If the objectives of the SAQP are not being met, the sampling design and approach will be reviewed and amended, as required.

3.2 Assessment of Data Quality

The quality of data collected as part of the sampling will be assessed on a range of factors including:

- Documentation and data completeness.
- Data quality – comparability, representativeness, precision and accuracy of the analytical data.

The project target for data completeness is to achieve 95% of data as suitable for use.

The acceptance criteria for DQIs for samples are specified in **Table 2**.

Table 2 Acceptance Criteria for Data Quality Indicators for Sample Analysis

Data Quality Indicators	Acceptance Criteria
Water and Sediment Samples	
Rinsates (where sampling equipment is reused) and Field blanks	Less than the laboratory LOR.
Field duplicates/Inter-lab duplicates	The relative percentage distributions (RPDs) will be assessed as acceptable if less than or equal to 30% as per the NEPM Schedule B3. Where the results shows greater than 30% difference a review of the cause will be conducted (NEPM, 2013). It is noted that RPDs that exceed this range may be considered acceptable where: • Results are less than 10 times the LOR (no limit). • Results are less than 20 times the LOR and the RPD is less than 50%. • Heterogeneous materials are encountered.
Laboratory duplicates	RPDs less than: • 20% for high level laboratory duplicates (i.e. >20 x LOR). • 50% for medium level laboratory duplicates (i.e. 10 to 20 x LOR).
Matrix spikes	Recoveries between 70-130% of the theoretical recovery or as nominated in the laboratory's QC report, based on their historical database.
Method blanks	Less than the laboratory LOR.
Laboratory control samples	Recoveries between laboratories specified range for each particular analyte / analytical suite.

4.0 Sampling Location Rationale and Methodology

4.1 OMP

The OMP (Defence, 2020a) presents an overview of specific monitoring works to be undertaken and provides the basis for the preparation of this SAQP. This scope of work presented in this SAQP is consistent with that detailed in the OMP (Defence, 2020a), with the exception of those points of deviation presented in **Section 4.15**.

4.2 Proposed Schedule

4.2.1 Sampling Events

Groundwater, surface water and sediment sampling from across the RAAF Base Amberley Management Area will be performed biannually in April and October, with the first sampling event scheduled to be completed in April 2020.

The proposed schedule of fieldworks is presented in **Table 3** below.

Table 3 Proposed Fieldwork Schedule

Sampling Round No.	Description of works	Proposed Schedule
1	Biannual groundwater, surface water and sediment sampling event	April 2020
2		October 2020
3		April 2021
4		October 2021
5		April 2022
6		October 2022
7		April 2023
8		October 2023
9		April 2024

Groundwater level monitoring at the Base to date has shown variability between end of wet season and end of dry season sampling events with up to 3 m difference.

During the dry season (October 2020), opportunities to collect surface water samples can be limited on-Base as drains are likely to be dry. During the OMP dry season monitoring event, if there is rainfall during the six weeks prior to the scheduled event, then opportunistic sampling of surface water from the Base drains should be conducted to ensure samples are collected.

4.3 Sample Location Rationale

4.3.1 Groundwater Sampling Locations

Groundwater monitoring will be undertaken on selected monitoring wells. The rationale for monitoring well selection for each area is summarised in **Table 4** below.

Table 4 Rationale for Groundwater Monitoring Locations

Area	Rationale
On-Base Alluvium, Tertiary Formation and Walloon Coal Measures aquifers	• Monitor spatial and temporal variations in PFAS concentrations in groundwater concentrations up, down and cross-gradient of source areas. • Assess if groundwater PFAS concentrations in bores to the north, east, west and south of the Base change in response to management measures over time. • Continue to monitor groundwater bores with existing temporal datasets to assist with better understanding of temporal patterns in PFAS concentrations. • Monitor groundwater parallel and perpendicular to the PFAS plume to assist with understanding changes in concentrations in these alignments. • Monitor surface water quality in Bremer River and Warrill Creek to assess PFAS migrating from the source areas via drainage channels. • Monitoring groundwater quality adjacent to the Bremer River and Warrill Creek to assess PFAS migrating from surface water to groundwater. • Assess if groundwater PFAS concentrations in bores to the south of the Base change following redevelopment of the Sewage Treatment Plant.
Off-Base Alluvium, Tertiary Formation and Walloon Coal Measures aquifers	• Monitor spatial and temporal variations in PFAS concentration in the groundwater down gradient of the Base. • Continue to monitor groundwater bores with existing temporal datasets to assist with better understanding of temporal patterns in PFAS concentrations. • Assess if groundwater and surface water PFAS concentrations in change in response to management measures over time. • Monitoring groundwater quality adjacent to the Bremer River and Warrill Creek to assess PFAS migrating from surface water to groundwater.

Note: Off-base sampling on private land will require the agreement of the landholder/leaseholder.

4.3.2 Groundwater Sampling Locations

The groundwater locations to be monitored as part of the sampling events are provided in **Table 5** below and are presented in **Figure 2** in Appendix A.

Table 5 Groundwater sampling locations

Location		Monitoring Well	No. of locations
Source Areas	Major CPSA A Former Topside Aviation FTA and current FTA Fire Pad	MW002*, MW033	2
	Major CPSA B Hangar 410 and Former Landfill	MW047	1
	Major CPSA C Frogs Hollow Former Fire Training School Location	MW037	1
	Major CPSA D Sewage Treatment Plant	MW021, MW032	2
	Moderate CPSA E Historical Containment Pond	MW048	1
	Major CPSA G Former FTA and Operational Testing Area	MW050	1
	Major CPSA J Former FTA and Operational Testing Area	MW005	1

Location		Monitoring Well	No. of locations
	Insignificant PSA L Potential Former Fire Training and Operations Test Area	MW006, MW023, MW028, MW029, MW036	5
	Major CPSA M Former Fuel Farm 1 and Triple Interceptor Pit	MW309	1
	Insignificant PSA T Potential Location of Aircraft F-4E Incident	MW035	1
	Minor CPSA V AFFF Wastewater Holding Tank	MW046	1
	Major CPSA W Fire Fighting Training School	MW026, MW030, MW031, MW042, MW043	5
	Major CPSA X Former Structural and Open Pit FTA Major CPSA Y Former Secondary FTA	MW041	1
	Minor CPSA Z Fuel UST with AFFF listing	MW020	1
	Moderate CPSA AA Triple Interceptor Pits at Engine Test Cell Facilities 1 and 2	MW007	1
	Minor CPSA BB Areas used for irrigation- former grassed runways	MW012	1
	Moderate CPSA CC Former Landfill	MW022	1
	Major CPSA DD HS748 Former FTA on Disused Runway	MW049	1
Off-Base Warrill Creek		*MW054S, MW054D,* MW057S, MW057I	4
On-Base Bremer River		MW024, MW025, MW034, MW044, MW055S, MW055D	6
Off-Base Bremer River		MW056S, MW056I	2

Note: *Italics* indicates well in private property, * MW002 was formerly known as MW2.

4.3.3 Groundwater Level Monitoring

During the DSI (CH2M Hill, 2018), pressure/water level transducers were installed to assess the interconnectivity between surface water and groundwater. The transducers are installed in MW28, MW32, MW34, MW55D, MW55S, MW56I and MW56S. These locations were selected to collect time series measurements of potentiometric head in wells nearest the river gauges (owned by Ipswich City Council or SEQ Water). These locations have been surveyed using high accuracy techniques. Standing water levels and surface water levels will be recorded during the biannual sampling events. Data from pressure/water level transducers at these locations will be downloaded during each biannual sampling event to assist in the assessment of surface water/groundwater connectivity.

One barometer logger was also installed during the DSI to allow for the adjustment of the effects of atmospheric pressure changes on water levels. Only one barologger was installed at the Base, since atmospheric conditions do not vary laterally. Data from the barologger should be collected to correct the loggers if major atmospheric pressure changes occur during the logging period (e.g. storms/fronts).

4.3.4 Surface Water and Sediment Sampling Locations

The surface water and sediment sampling locations to be monitored as part of the sampling events are provided in **Table 6** below and are presented on **Figure 3** in Appendix A. A table showing historical and current sample identification numbers is presented in Appendix B.

Table 6 Surface Water and Sediment Sampling Locations

Area	Sampling Locations	Number of Locations
On-Base Drains	SD/SW002, SD/SW003, SD/SW008, SD/SW011, SD/SW021, SD/SW027, SD/SW028, SD/SW030, SD/SW033, SD/SW037, SD/SW038, SD/SW041, SD/SW048, SD/SW049, SD/SW053, SD/SW056, SD/SW059, SD/SW079, SD/SW064, SD/SW067, SD/SW076, SD/SW080	22
Warrill Creek	SD/SW004, SD/SW005, SD/SW009, SD/SW015, SD/SW016, SD/SW018, SD/SW020, SD/SW026, SD/SW034, *SD/SW070*, SD/SW099, SD/SW100	12
Bremer River	SD/SW025, SD/SW036, SD/SW039, SD/SW040, SD/SW045, SD/SW047, SD/SW050, SD/SW051, SD/SW052, SD/SW088, SD/SW089, SD/SW090, SD/SW091, SD/SW094, SD/SW098	15

Note: *Italics* indicates well in private property

4.4 Sample Collection and Handling

4.4.1 Groundwater Sampling

The groundwater sampling methodology and schedule are presented in **Table 7**.

Table 7 Groundwater Sampling Methodology and Schedule

Item	Details
Groundwater gauging	The depth to groundwater will be measured in each monitoring well immediately prior to collection of groundwater samples. Gauging of the wells will take place in as short a time as possible, however, it is noted that due to access constraints due to ongoing operations and the large number of wells (40), it is difficult to collect gauging data from all the wells in a short timeframe and may take a few days to complete the gauging.
Sample Collection Methodology	Groundwater samples will be collected from all monitoring wells using no-purge methodology HydraSleeves™, which will be installed to the target depths specified in Appendix B, within the screened interval of the wells for a minimum of 24 hours prior to the sampling round. Monitoring well construction details are presented in Appendix B. Once sampling is completed, new HydraSleeves™ will be deployed to the target depths specified in Appendix B, within the screened interval depth in preparation for the next sampling round.
QA/QC Samples to be Collected	Field QA/QC samples are to include intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), equipment rinsate blank (rinsate) samples and field blank samples. Duplicate samples are to be collected at a minimum frequency of 1 in 10 primary samples. Rinsate samples are to be collected at a rate of one sample per fieldwork day by pouring laboratory supplied PFAS-free deionised water over the decontaminated sampling equipment.

Item	Details
Field Parameters	Field observations, temperature, electrical conductivity (EC), dissolved oxygen (DO), oxidation-reduction potential (ORP), pH and observations of water quality will be recorded for all samples.
Decontamination Procedures	Non-dedicated equipment in contact with groundwater (i.e. interface probe and water quality meter probe) will be decontaminated by being cleaned with a PFAS-free detergent and PFAS-free deionised water supplied by the analytical laboratory.
Sample Analysis	All primary samples will be submitted for PFAS extended suite using the standard levels of detection.
Sampling Schedule	The monitoring at RAAF Base Amberley will include two biannual monitoring events in April and October. Both sampling events will include the sampling of up to 40 groundwater monitoring wells.

4.4.2 Surface Water Sampling

The surface water sampling methodology and schedule is presented in **Table 8**.

Table 8 Surface Water Sampling Methodology and Schedule

Item	Details
Sample Collection Methodology	Samples to be collected from immediately below the water surface to minimise collection of sediment or floating materials in the samples. At each location, a new, laboratory supplied container will be lowered into the water with the cap immediately applied once the container is full.
QA/QC Samples to be Collected	Field QA/QC samples are to include intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), equipment rinsate blank (rinsate) samples and field blank samples. Duplicate samples are to be collected at a minimum frequency of 1 in 10 primary samples. Rinsate samples are to be collected at a rate of one sample per fieldwork day by pouring laboratory supplied PFAS free deionised water over the decontaminated sampling equipment.
Field Parameters	Field observations, temperature, EC, DO, ORP, pH and observations of water quality will be recorded for all samples.
Decontamination Procedures	Non-dedicated equipment in contact with groundwater (i.e. interface probe and water quality meter probe) will be decontaminated by being cleaned with a PFAS-free detergent and PFAS-free deionised water supplied by the analytical laboratory.
Sample Analysis	All primary samples will be submitted for PFAS extended suite using the standard levels of detection.
Sampling Schedule	The monitoring at RAAF Base Amberley will include two biannual monitoring events in April and October. Both sampling events will include the collection of 49 surface water samples.

4.4.3 Sediment Sampling

The sediment sampling methodology and schedule are outlined in **Table 9**.

Table 9 Sediment Sampling Methodology and Schedule

Item	Details
Sample Collection Methodology	Samples representative of potentially deposited sediments to be collected from within the water body if possible. Sediment samples will be collected using a trenching shovel from the base of the drain (where possible), or using a Dormer Piston Sediment Sampler or a hand-grab sample using a clean pair of nitrile gloves. At each location, a new laboratory supplied container will be used for each sample.
QA/QC Samples to be Collected	Field QA/QC samples are to include intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), equipment rinsate blank (rinsate) samples and field blank samples. Duplicate samples are to be collected at a minimum frequency of 1 in 10 primary samples. Rinsate samples are to be collected at a rate of one sample per fieldwork day by pouring laboratory supplied PFAS free deionised water over the decontaminated sampling equipment.
Sample Analysis	All primary samples will be submitted for PFAS extended suite using the standard levels of detection.
Sampling Schedule	The monitoring at RAAF Base Amberley will include two biannual monitoring events in April and October. Both sampling events will include the collection of 49 sediment samples.

4.4.4 Sample Handling and Transport to Laboratory

AECOM personnel will attempt to reduce potential heterogeneity in the sample media matrix by dividing the sample collected between primary and intra-laboratory jars or bottles during sampling. All samples will be placed on ice in eskies immediately after sampling.

All samples will be kept, if possible, at or below 4°C during transit to the laboratory. Prior to sampling, assessment of the analytical holding times will be made and the sampling planned accordingly to help ensure that holding times are not breached or are minimised as far as practicable.

Samples will be transported to the laboratory for analytical testing under standard chain of custody (CoC) documentation. Primary and associated duplicate QA/QC samples will be analysed by ALS Brisbane. The inter-laboratory duplicate samples will be analysed by the National Measurement Institute (NMI) or Eurofins Brisbane laboratory.

4.5 Calibration

The water quality meter will be calibrated each day prior to the commencement of field activities with relevant solutions, including pH, EC and ORP. The calibration will be in accordance with manufacturers' instructions or National Association of Testing Authorities (NATA) publication "General Requirements for Registration: Supplementary Requirement: Chemical Testing (NATA 1993) and Technical Note N0. 19 (NATA 1994)". Where satisfactory calibration cannot be achieved, the water quality data will not be used for interpretive purposes.

Calibration details will be recorded on field sheets and included in the Sampling Events Factual Reports.

A calibrated interface probe should be used for the gauging of the monitoring wells with a copy of the calibration certificate included in the Sampling Event Factual Reports.

4.6 Logistics

The laboratory sample containers will be collected from the laboratory prior to the commencement of fieldwork. All samples will be transported to ALS by the field team or a supplied courier at the completion of fieldwork. All inter-laboratory duplicate samples will be couriered direct to the secondary laboratory under a separate CoC documentation for analysis.

4.7 Analytical Suite and Laboratory Analysis Methods

4.7.1 Laboratory NATA Accreditation Details

The laboratory is required to use NATA accredited methods based on NEPM, US EPA, Table B 15 of the US Department of Defence/Department of Energy (US DOD/DoE) and American Society for Testing and Materials (ASTM) methods as appropriate.

The primary laboratory selected for this program is ALS (NATA Accreditation Number 825). The secondary laboratories selected for this program are NMI (NATA Accreditation Number 198) and Eurofins Brisbane (NATA Accreditation Number 1261).

4.7.2 Analytical Schedule

All media sampled shall be analysed for the extended PFAS suite as outlined in **Table 10** below.

Table 10 Sample Analytical Suite for PFAS

PFAS Group	Compound	CAS No.
Perfluoroalkyl Sulfonic Acids	Perfluorobutane sulfonic acid (PFBS)	375-73-5
	Perfluoropentane sulfonic acid (PFPeS)	2706-91-4
	Perfluorohexane sulfonic acid (PFHxS)	355-46-4
	Perfluoroheptane sulfonic acid (PFHpS)	375-92-8
	Perfluorooctane sulfonic acid (PFOS)	1763-23-1
	Perfluorodecane sulfonic acid (PFDS)	335-77-3
Perfluoroalkyl Carboxylic Acids	Perfluorobutanoic acid (PFBA)	375-22-4
	Perfluoropentanoic acid (PFPeA)	2706-90-3
	Perfluorohexanoic acid (PFHxA)	307-24-4
	Perfluoroheptanoic acid (PFHpA)	375-85-9
	Perfluorooctanoic acid (PFOA)	335-67-1
	Perfluorononanoic acid (PFNA)	375-95-1
	Perfluorodecanoic acid (PFDA)	335-76-2
	Perfluoroundecanoic acid (PFUnDA)	2058-94-8
	Perfluorododecanoic acid (PFDoDA)	307-55-1
	Perfluorotridecanoic acid (PFTrDA)	72629-94-8
	Perfluorotetradecanoic acid (PFTeDA)	376-06-7
Perfluoroalkyl Sulfonamides	Perfluorooctane sulphonamide (FOSA)	754-91-6
	N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8
	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2
	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7

PFAS Group	Compound	CAS No.
	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2
	N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9
	N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6
(n:2) Fluorotelomer Sulfonic Acids	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4
	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2
	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0

The current standard laboratory limits of reporting (LOR) are described in **Table 11** below.

Table 11 Laboratory Limits of Reporting

Sample Media	Parameter	Technique/Method Reference	LOR*
Groundwater and Surface Water	Extended PFAS Suite	LC/MS-MS	0.002 – 0.1 µg/L
Sediment	Extended PFAS Suite	LC/MS-MS	0.0002 – 0.001 mg/kg

LC/MS-MS = Liquid chromatography–mass spectrometry, GC = Gas chromatography

*LOR for Australian Laboratory Services (ALS)

4.8 Sample Nomenclature

In order to meet Defence data management requirements, a consistent sample nomenclature has been adopted for the Program. All primary samples will be labelled using the following Defence Contamination Management Manual (DCCM) naming convention:

PPPP_XX000_ZZZ_YYMMDD

[property ID]_[type of sample][THREE DIGIT sample number]_[top of sample depth]_[yearmonthday]

e.g. 0861_MW001_191015

Location types and codes are prescribed by Defence and the Site's investigation history.

Primary Sample Types/Location Codes relevant to this OMP include:

- SD = sediment – top depth required
- MW = monitoring well
- SW = surface water - no depth required

QA/QC Samples will be labelled in accordance with the following convention:

- Duplicate: PPPP_QC1XX_YYMMDD
- Triplicate: PPPP_QC2XX_YYMMDD
- Rinsate: PPPP_QC3XX_YYMMDD

4.9 Defence ESdat Requirements

Defence has contracted Earth Science Information Systems (EScIS), to provide contamination data management services through a cloud instance of its ESdat product.

All OMP field and laboratory data collected by AECOM will be uploaded, stored and managed in Defence's ESdat database in accordance with Section 6 of Annex L to the Defence Contamination

Management Manual (Defence, 2018). AECOM will refer to historical investigation data to ensure consistent location codes are used to enable analysis of data trends. Where required under Annex L, non-compliant location codes will be resolved under direction from Defence.

AECOM will upload the data from each monitoring event into ESdat prior to submitting the Sampling Event Factual Report.

4.10 Adopted Screening Criteria

Adopted screening criteria references national guidance in the form of the PFAS National Environmental Management Plan, Defence estate and environmental strategies, and Defence PFAS-specific strategies and guidance.

At the time of preparing this SAQP, a number of guidance documents were in circulation in Australia including:

- PFAS NEMP, version 2.0 (HEPA 2020).
- DoH, 2019. Health Based Guidance Values for PFAS for use in site investigations in Australia. 2019.
- NHMRC, 2019. Guidance on PFAS in Recreational Water. August 2019 (NHMRC 2019).
- NEPM 1999, Schedule B1, as amended in 2013 (NEPC, 2013).

The adopted PFAS screening criteria to assess the data generated as part of the OMP are presented in **Table 12** below. This adopts the criteria specified in the PMAP (Defence, 2020a).

Table 12 Summary of Adopted Screening Criteria

Pathway	Compound	Criteria	Comment / Reference
Human Health Receptors			
Drinking water - groundwater	PFOS + PFHxS	0.07 µg/L	The values presented are from HEPA (2020). *All groundwater results will be compared to these criteria.*
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	The values presented are from the NHMRC (2019). *All surface water results will be compared to these criteria.*
	PFOA	10 µg/L	
Ecological Receptors			
Freshwater (95% species protection values)	PFOS	0.13 µg/L	The values are from the HEPA (2020). *All surface water and groundwater results will be compared to these criteria.*
	PFOA	220 µg/L	
Freshwater (99% species protection values)	PFOS	0.00023 µg/L	
	PFOA	19 µg/L	

There are no current PFAS screening criteria in Australia for sediment.

4.11 Waste Management

Due to the proposed “no purge” sampling methodology, it is not anticipated that significant volumes of liquid waste would be generated that would require management or disposal.

No waste soil will be generated due to the proposed grab sampling approach.

All consumables (i.e. HydraSleeves™, filter cartridges, general rubbish) will be bagged and placed in on-site general waste bins for disposal.

4.12 Quality Assurance/Quality Control Sampling

4.12.1 Field Duplicate and Inter-laboratory Duplicate Samples

Field duplicate (intra-laboratory) duplicate samples and split (inter-laboratory field duplicates) are to be collected and analysed at a minimum frequency of 1 in 10 primary samples.

4.12.2 Rinsate Samples

Rinsate samples are to be collected at a rate of one sample per fieldwork day or at least one rinsate sample per ten primary samples (whichever rate is lower) by pouring laboratory supplied deionised water over the decontaminated sampling equipment.

4.12.3 Field Blank Samples

Field blank samples are to be collected at a rate of one sample per fieldwork day by filling sample containers with laboratory supplied deionised water in the field. This exposes the field blanks to the atmosphere of the sampling site.

4.12.4 Trip Blank Samples

Trip blank samples will be supplied by the laboratory and placed in sample transport eskies at a rate of one per batch of samples. The trip blank samples will be analysed for PFAS to assess if any contaminants have entered the sample containers during sampling or in transit to the laboratory or the container itself.

4.13 Fieldwork Documentation

4.13.1 Field Notes

Field notes will be maintained to record all field sampling events and include observations made at each sample location. Field notes will include information specific to the sample media as follows:

- Groundwater and surface water samples – comments on the observed characteristics of the sample (e.g. colour, turbidity, odour, sheen) and reported field water quality parameters (pH, EC, DO, ORP, temperature) will be recorded.
- Sediment samples - comments on the morphology of the sample location, the depth, flow direction and strength of water flow (if water is present), the water and sediment/soil colour and odour, and the presence of flora and fauna. The soil/sediment types observed at each sample location will be described using the Unified Soil Classification System (USCS).

The coordinates for each sample location will be noted. The location of quality control (e.g. duplicate and inter-laboratory duplicate) sample collection points will also be noted.

AECOM's tablet-based data capture ('EDCA') system will be utilized by field staff to minimise potential data recording errors and allow on-the-spot identification of potentially erroneous data in comparison to historical data.

4.13.2 Sample Labels

AECOM will utilise the tablet-based ALS 'Compass' sample management application to streamline sample labelling and CoC creation to ensure compliant sample IDs are used in the field.

Sample containers will also be labelled with the sample ID as a failsafe method with the following information:

- AECOM project number.
- Name of sampler.
- Sample ID.
- Date of sample collection.

- Filtered vs non-filtered (for water samples only).

A ball point pen will be used for labelling, to ensure PFAS is not introduced to the samples from permanent markers.

4.13.3 Chain of Custody Forms

A CoC form will be completed, documenting the sample identification number and analytes. The CoC documents the chain of events from sample collection to delivery at the laboratory and provides a traceable account of sample handling. The CoC form will be signed by both the sample collector and the receiving laboratory.

The CoC form will include the following information:

- Job number (Note: the name of the site is not identified for confidentiality purposes).
- Date and time of sample collection.
- Sample ID.
- Type of containers.
- Name of sampler.
- Laboratory to be used.
- Analyses required.
- Any comments.
- Signatures of the sampler and laboratory receiver.

In the event that additional samples are collected during the field investigations due to observations made by the Field Team, (i.e. samples not proposed in this SAQP), Defence will be provided the rationale for collection of those samples and proposed laboratory analyses. Defence approval will be sought to include these samples on the CoC and to dispatch these samples to the laboratory.

Upon receipt of the original documents accompanying the samples at the laboratory, the laboratory will provide a sample receipt document (noting the temperature of samples upon receipt, analyses required and any non-conformances) and return the signed CoC form to confirm analyses to be performed and the due date for the analytical results.

4.13.4 Sampling Documentation

Field sampling sheets will be completed for each location, and will include the following information (as appropriate for the media being sampled):

- Name of sampler.
- Sample location.
- Date /time of monitoring/ sampling.
- Sampling method.
- Observations of the sampled media.
- Calibration records.

Records of all equipment calibration will be included in the Sampling Event Factual Reports. Photographs of surface water sampling locations will be taken where permitted.

4.14 Reporting

4.14.1 Sampling Event Factual Report

No later than four weeks following receipt of the laboratory reports, AECOM will prepare and submit a Sampling Event Factual Report to Defence. The report will be in accordance with the guidance document (Defence, 2020b). Each Sampling Event Factual Report will include:

- Details of the scope of monitoring completed.
- A description of the sampling methodologies used
- A summary of observations made while sampling (e.g. any visual or olfactory observations that may indicate impacts to surface water or groundwater)
- A summary of any changes to the monitoring network condition that may affect data integrity, or require rectification works, and recommendations for repair, replacement of decommissioning of a location
- A presentation of the analysis results in a table that includes comparisons with PFAS guidelines, highlighting any significant statistical deviations from historical monitoring and investigation data
- A presentation of the reduced groundwater levels for the event on a figure with inferred contours and inferred groundwater flow direction
- Discussion of the analytical data quality, including review of the quality control sampling results and laboratory quality control data
- Inclusion of the following information as attachments:
    - Figures
    - Tables
    - Groundwater sampling forms including field water quality parameter measurements;
        i. Chain of custody forms;
        ii. Laboratory analytical certificates; and
        iii. Equipment calibration certificates.

4.14.2 Annual Interpretive Report

At the end of each 12-month monitoring period, AECOM will prepare and submit an Annual Interpretive Report to Defence. Each Interpretive Report will include:

- Evidence of compliance with the requirements of the SAQP and meeting stated objectives of the OMP (Defence, 2020a).
- Relevant figures depicting sampling locations and site-specific hydrogeological features.
- Laboratory results and analysis including comparison with relevant screening criteria as identified in each OMP (Defence, 2020a).
- Assessment and commentary on appropriate QA/QC procedures,
- A review of the CSM and provision of a revised CSM if required.
- Data interpretation, including trends in groundwater concentration, gradient and flow directions.
- Assessment of statistically based trends that may inform decision making when it comes to the revision of an OMP (Defence, 2020a).
- A statement as to whether the risk profile has changed overall, or for any specific location at the Site, and a recommendation as to whether this should trigger an OMP and/or PMAP review, or other action.

4.15 Deviations from OMP

While the scope of works and methodology described in this SAQP are generally consistent with that presented in the OMP (Defence, 2020a), some points of deviation are noted (refer to **Table 13** below).

Table 13 Deviations from OMP

No.	Description	Rationale
1	Changes to the analytical suite.	The PMAP (Defence, 2020a) specified all water samples were to be analysed for major cations and anions. For the first two sampling events in 2020, approximately 20% of samples were analysed for a non-PFAS suite. Following a review of the SAQP, the collection and analysis of samples for non-PFAS analytes is not justified at the Base at this time to meet the requirements of the OMP and hence has been removed from the analytical schedule.
2	Removal of lost / damaged monitoring wells from the OMP.	In 2021, six monitoring wells were not accessible including MW008, MW009, MW015, MW039, MW040 and MW056 (formerly known as MW002). These were removed from the Revision 4 SAQP. An OMP review is being completed in 2023, which will consider the need for replacement monitoring wells.

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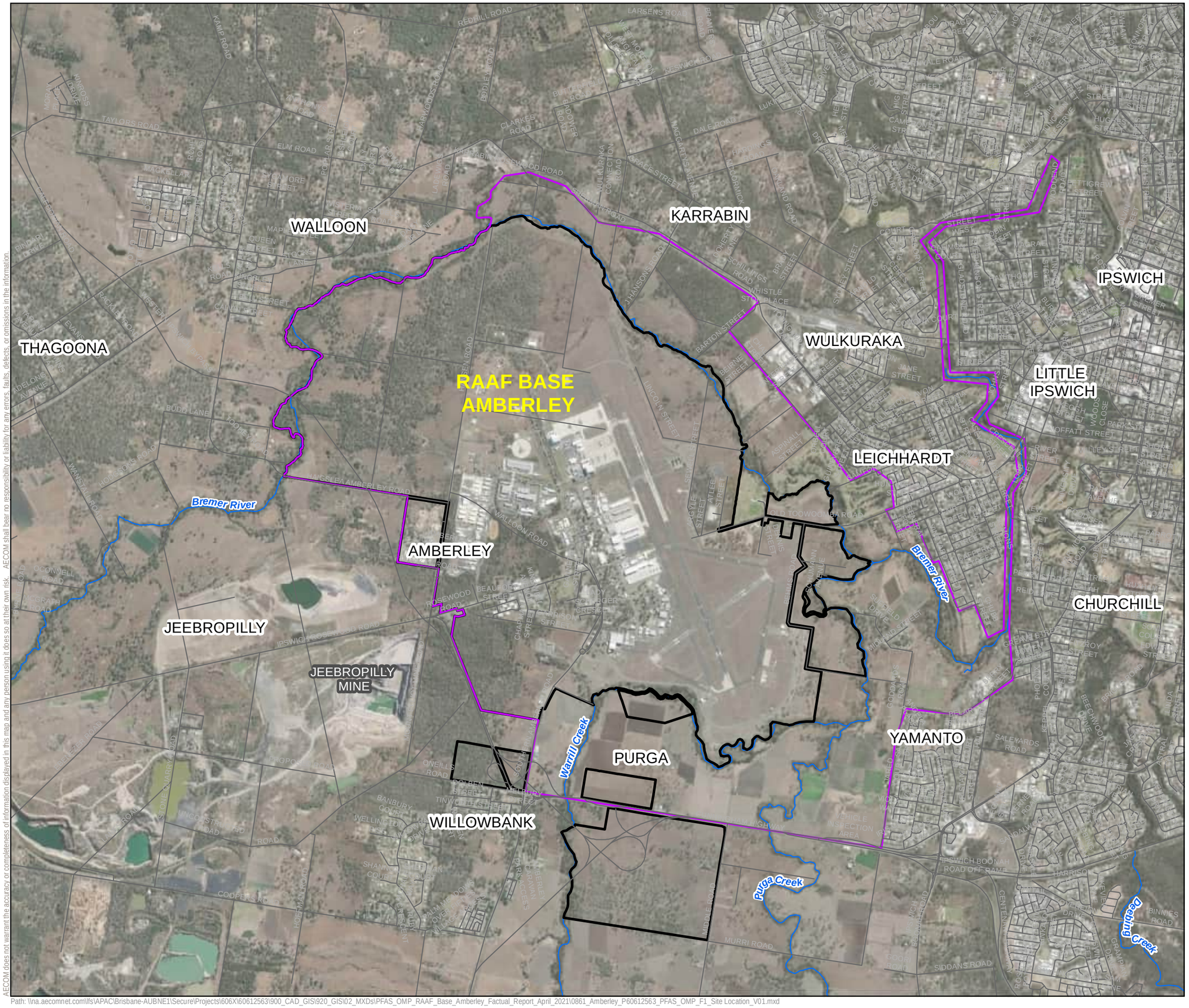
Appendix A

Figures

Appendix A Figures



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AECOM

SCALE 1:38,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 1: RAAF BASE AMBERLEY LOCATION

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY SAQP

CLIENT

DEPARTMENT OF DEFENCE

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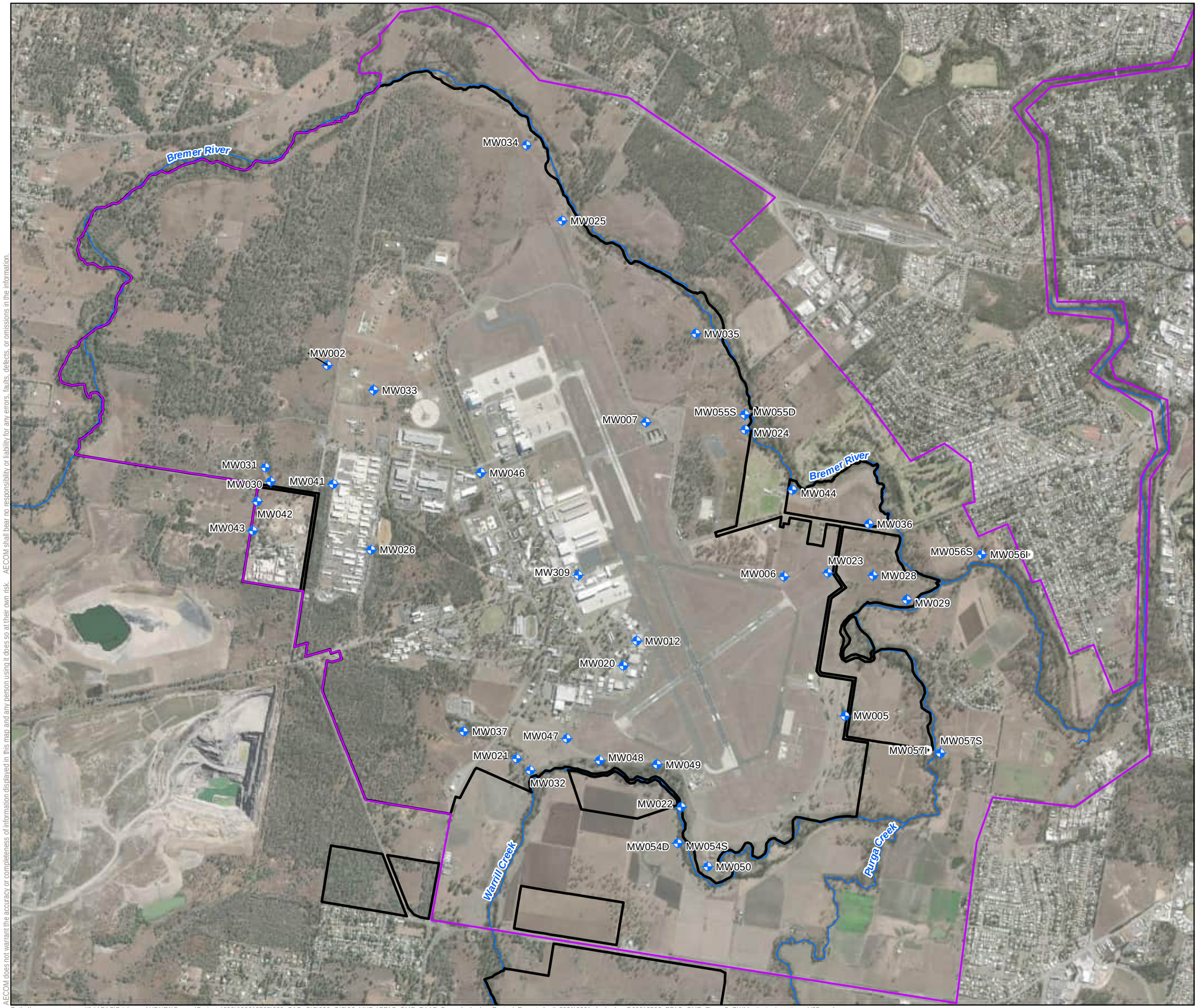

LEGEND

- Groundwater Monitoring Wells
- Management Area
- Base Boundary

N

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET -

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 2: Groundwater Monitoring Wells

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAQP

CLIENT

DEPARTMENT OF DEFENCE

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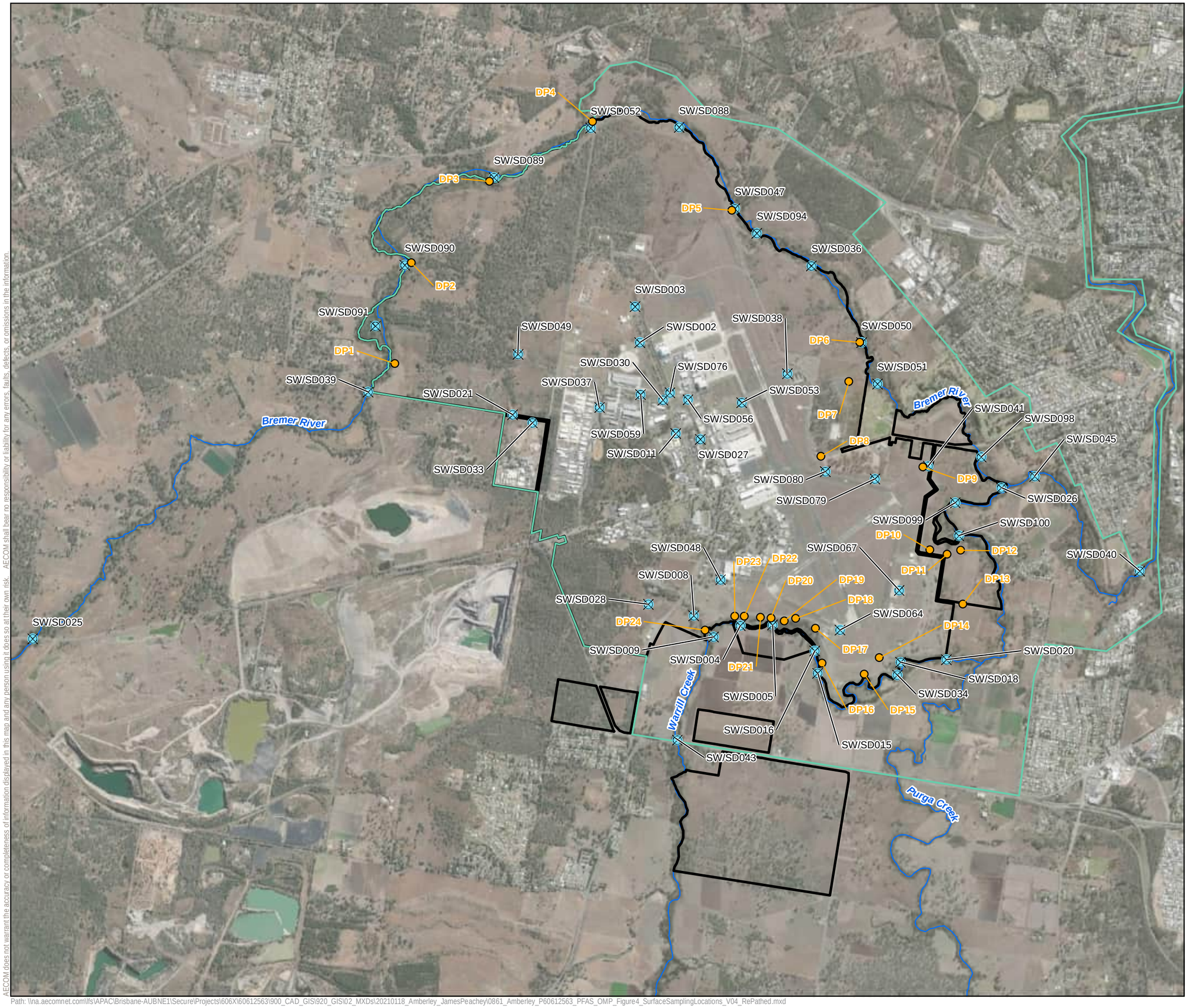

LEGEND

- Discharge locations
- Surface Water / Sediment Sample
- RAAF Base Amberley (0861) Boundary
- Management Area
- Watercourses

N

0 0.5 1 km

AECOM

SCALE 1:35,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 3: Surface Water and Sediment Sampling Locations

PROJECT PFAS OMP – RAAF BASE AMBERLEY SAQP

CLIENT DEPARTMENT OF DEFENCE

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Appendix B

Monitoring Well Construction Details

Appendix B Monitoring Well Construction Details

Monitoring Well Construction Details

Property ID	Well ID	Aquifer	TOC Elevation (mAHD)	Top of screen (mAHD)	Bottom of screen (mAHD)	Target depth of Hydrasleeve (mbtoc)
0861	MW002	Walloon Coal Measures	-	16.70	23.70	22.50
0861	MW005	Alluvium	26.725	13.00	17.00	16.00
0861	MW006	Alluvium	21.937	10.30	14.30	12.50
0861	MW007	Alluvium	23.208	6.00	10.00	9.00
0861	MW012	Tertiary Formation	26.175	12.50	17.50	15.00
0861	MW020	Tertiary Formation	27.043	12.50	16.50	15.00
0861	MW021	Alluvium	20.72	2.50	6.00	4.50
0861	MW022	Alluvium	19.65	4.00	9.00	8.00
0861	MW023	Alluvium	20.51	7.80	11.80	11.00
0861	MW024	Alluvium	20.95	7.00	11.00	10.00
0861	MW025	Alluvium	25.42	7.40	11.40	10.50
0861	MW026	Tertiary Formation	40.24	14.50	17.50	16.00
0861	MW028	Alluvium	20.83	10.50	14.50	12.50
0861	MW029	Alluvium	18.23	7.00	10.00	9.00
0861	MW030	Walloon Coal Measures	35.84	17.00	21.00	19.50
0861	MW309	Tertiary Formation	28.607	13.00	19.00	17.50
0861	MW031	Tertiary Formation	33.45	14.50	20.50	16.50
0861	MW032	Alluvium	26.28	8.00	14.00	12.50
0861	MW033	Walloon Coal Measures	42.456	29.00	33.00	32.00
0861	MW034	Alluvium	24.305	5.00	10.00	8.50
0861	MW035	Alluvium	24.999	8.00	13.50	12.00
0861	MW036	Alluvium	24.04	10.20	15.20	13.00
0861	MW037	Alluvium	25.219	5.00	10.00	9.00
0861	MW041	Walloon Coal Measures	46.383	11.50	14.50	13.00
0861	MW042	Walloon Coal Measures	40.036	24.00	30.00	27.00
0861	MW043	Walloon Coal Measures	49.182	18.00	21.00	19.50
0861	MW044	Alluvium	20.311	8.00	11.00	9.50
0861	MW046	Tertiary Formation	26.001	8.20	11.20	9.50
0861	MW047	Tertiary Formation	26.265	10.50	13.50	11.50
0861	MW048	Alluvium	23.108	7.50	10.50	9.00
0861	MW049	Alluvium	22.044	7.50	10.50	9.00
0861	MW050	Alluvium	24.317	11.50	14.50	13.00
0861	MW054S	Alluvium	24.317	4.00	7.00	6.00
0861	MW054D	Walloon Coal Measures	24.317	18.00	21.00	19.50
0861	MW055S	Alluvium	24.317	9.00	12.00	10.50
0861	MW055D	Walloon Coal Measures	24.317	28.00	34.00	32.00
0861	MW056S	Alluvium	15.078	6.50	9.50	8.50
0861	MW056I	Tertiary Formation	14.762	12.50	15.50	14.50
0861	MW057S	Alluvium	16.479	5.50	8.50	7.50
0861	MW057I	Tertiary Formation	16.494	12.50	15.50	14.00

mbtoc - metres below top of casing
mAHD - metres above Australian Height Datum
TOC - top of casing
` - no data

Appendix F

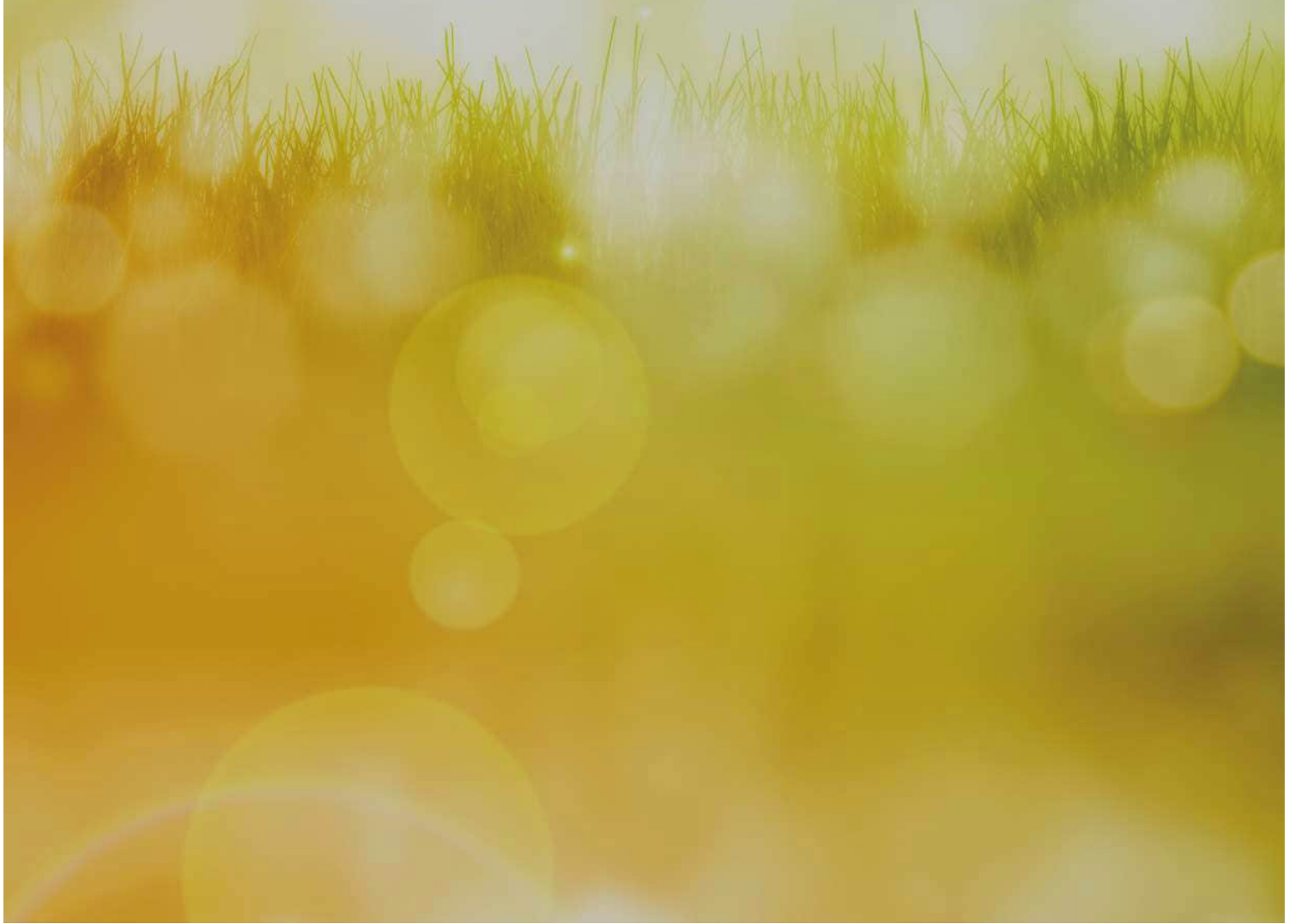
Factual Reports

Department of Defence
27-Oct-2023

AECOM

Sampling Event Factual Report, March/April 2021

PFAS OMP - RAAF Base Amberley



Sampling Event Factual Report, March/April 2021

PFAS OMP - RAAF Base Amberley

Client: Department of Defence

ABN: 68706814312

Prepared by

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27-Oct-2023

Job No.: 60612563

Quality Information

Document	Sampling Event Factual Report, March/April 2021
Ref	60612563
Date	27-Oct-2023
Prepared by	[redacted]
Reviewed by	[redacted]

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	10-Jun-2021	Draft for Client Review	[redacted] Project Manager	
B	06-Jul-2021	Draft for Client Review	[redacted] Project Manager	
C	18-Aug-2021	Draft for Client Review	[redacted] Project Manager	
0	30-Aug-2021	Final	[redacted] Project Manager	
1	23-Nov-2021	Final	[redacted] Project Manager	
2	14-Feb-2022	Final	[redacted] Project Manager	
3	27-Oct-2023	Final	[redacted] Project Manager	[redacted]

Table of Contents

List of Tables (in Text)

List of Figures (in Appendix A)

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Abbreviations

Abbreviation	
ALS	Australian Laboratory Services
ASC NEPM	Assessment of Site Contamination National Environment Protection Measure 1999 (as amended 2013)
COC	Chain of custody
CPSA	Confirmed primary source area
DCMM	Defence Contamination Management Manual
Defence	Department of Defence
DO	Dissolved oxygen
EC	Electrical conductivity
FTA	Firefighting training area
HEPA	Heads of Environmental Protection Agencies
IP	Interface probe
LNAPL	Light non aqueous phase liquid
LOR	Limit of reporting
mAHD	metres Australian height datum
mbtoc	Metres below top of casing
NATA	National Association of Testing Authorities
NEMP	National Environmental Management Plan
NHMRC	National Health and Medical Research Council
NMI	National Measurement Institute
OMP	Ongoing management plan
ORP	Oxidation reduction potential
PFAS	Per- and poly-fluorinated alkyl substances
PFHxS	Perfluorohexane sulfonate
PFOA	Perflurooctanoic acid
PFOS	Perflurooctanesulfonic acid
PMAP	PFAS management area plan
QA/QC	Quality assurance / quality control
RAAF	Royal Australian Air Force
QLD	Queensland
RPD	Relative percent difference
SAQP	Sampling analysis and quality plan
SWL	Standing water level

Units of Measurement			
L	Litres	m	Metre
mg	Milligram	ha	Hectares
kg	Kilogram	S	Siemens
mV	Millivolts	cm	Centimetre
µg	Microgram		

1.0 Introduction

1.1 General

AECOM Australia Pty Ltd (AECOM) has been engaged by the Department of Defence (Defence) to implement the per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Program (OMP) (Defence, 2020) at the Royal Australian Airforce (RAAF) Base Amberley (the 'Site') and the Management Area in the South Queensland Region. The locations of the Site and Management Area are shown on **Figure 1** in **Appendix A**.

The OMP for RAAF Base Amberley (Defence 2020) includes the following sampling events:

- Biannual groundwater, surface water and sediment sampling in April and October in 2020, 2021, and 2022.

Following each biannual sampling event, sampling event factual reports will be prepared. Annual interpretative reports will be prepared following the completion of each 12-month sampling period. This sampling event factual report has been prepared to report the results of the biannual sampling event completed in March / April 2021, specifically highlighting first time detections and/or first-time exceedances of human health screening criteria for PFHxS+PFOS and / or PFOA.

This report has been prepared in accordance with the *PFAS OMP Factual Reports Guidance,* v 0.2, May 2021 (Defence, 2021).

1.2 Objectives

The objectives of the OMP are to:

- Implement the OMP prepared as part of the PFAS Management Area Plan (PMAP); and
- Collect data that will enable Defence to maintain an up to date understanding of the distribution, concentration and transport of PFAS at each property.

The data will assist in the timely identification of risks and inform Defence's approach to the management of PFAS, including updates and revisions to the PMAP.

The objective of this phase of works was to implement the scope of works for the March / April 2021 sampling event in accordance with the sampling and analysis quality plan (SAQP) (AECOM, 2021a).

2.0 Scope of Work

The sampling event at RAAF Base Amberley was completed in general accordance with the SAQP (AECOM, 2021a). In summary, the scope of works for this sampling event included:

- Obtaining access to private properties where some groundwater sampling locations are situated.
- Review of the SAQP prior to the monitoring event to ensure compliance with the following:
  - PFAS National Environmental Management Plan (NEMP) (2020)
  - National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, as amended in 2013 (ASC NEPM, 2013)
  - Defence Routine Environment Water Quality Monitoring Manual
  - AS/NZ 5667:1998 Water quality – Sampling
  - Australian and New Zealand Guidelines for Fresh and Marine Water Quality; and
  - Relevant State regulatory guidelines.
- Gauging of groundwater elevation in all monitoring wells prior to collection of samples (refer to **Table 1** below, and **Figure 2** in **Appendix A** for specific locations).
- Collection of groundwater samples at 46 locations including 40 on-Site monitoring wells and six off-Site monitoring well locations. Details are included in **Table 1** below and **Figure 2** in **Appendix A**. Groundwater samples from eight monitoring wells could not be collected during this sampling event. Refer to **Table 9** for more details.
- Collection of co-located surface water and sediment samples at 49 locations, including 42 on-Site locations, and seven off-Site locations (refer below to **Table 2** and **Table 3** and **Figure 3** in **Appendix A**). It is noted that one surface water sample could not be collected during this sampling event. Refer to **Table 11** for more details.
- Downloading groundwater level data from data loggers installed in seven groundwater monitoring wells (MW028, MW032, MW034, MW055S, MW055D, MW056S, MW056I), refer to **Figure 2** in **Appendix A** for data logger locations.
- Collection of intra- and inter- laboratory duplicate samples at a rate of 1 in 10 primary samples, one field blank sample per day, one rinsate sample per fieldwork day and one trip blank per batch.
- Analysis of all samples for the PFAS suite at the standard limit of reporting (LOR).
- Data management of all OMP field and laboratory data in the Defence ESdat database.
- Preparation of results letters for off-Site stakeholders.
- Preparation of this Sampling Event Factual Report.

Table 1 Groundwater Sampling Locations

Location		Monitoring Wells
Source Areas	Former Topside Aviation Fire Training Area (FTA) and current FTA Fire Pad (Confirmed Primary Source Area [CPSA] A)	MW002, MW008, MW009, MW033, MW039, MW040
	B Hangar 410 and Former Landfill	MW047
	Frogs Hollow Former Fire Training School Location (CPSA B)	MW037
	Sewage Treatment Plant (CPSA D)	MW021, MW032
	Historical Containment Pond (CPSA E)	MW048
	Former Fire Training Area and Operational Testing Area (CPSA G)	MW050
	Former Fire Training Area and Operational Testing Area (CPSA J)	MW005
	Potential Former Fire Training Area and Operations Test Area (CPSA L)	MW006, MW023, MW028, MW029, MW036
	Former Fuel Farm 1 and Triple Interceptor Pit (CPSA M)	MW056, MW309
	Potential Location of Aircraft F-4E Incident (CPSA T)	MW035
	AFFF Wastewater Holding Tank (CPSA V)	MW046
	Fire Fighting Training School (CPSA W)	MW026, MW030, WM031, MW042, MW043
	Former Structural and Open Pit Fire Training Area and Former Secondary Fire Training Area (CPSA X and Y)	MW015, MW041
	Fuel UST with AFFF listing (CPSA Z)	MW020
	Triple Interceptor Pits at Engine Test Cell Facilities 1 and 2 (CPSA AA)	MW007
	Areas used for irrigation – former grassed runways (CPSA BB)	MW012
	Former Landfill (CPSA CC)	MW022
	Former Fire Training Area on Disused Runway (CPSA DD)	MW049
Off-Site Warrill Creek		*MW054S, MW054D,* MW057S, MW057I
On-Site Bremer River		MW024, MW025, MW034, MW044, MW055S, MW055D
Off-Site Bremer River		MW056S, MW056I

Note: *Italics* indicates that the well location is in private property
Wells with S, D or I are adjacent monitoring wells that are screened in different aquifers . S indicates the well is screened in the shallow aquifer, D or I indicates the well is screened in the deeper aquifer.
MW002 was formerly known as MW2. MW056 was formerly known as MW002.

Table 2 Surface Water Sampling Locations

Area	Surface Water Sampling Locations	Number of Locations
On-Base Drains	SW002, SW003, SW008, SW011, SW021, SW027, SW028, SW030, SW033, SW037, SW038, SW041, SW048, SW049, SW053, SW056, SW059, SW064, SW067, SW076, SW079, SW080	22
Warrill Creek	SW004, SW005, SW009, SW015, SW016, SW018, SW020, SW026, SW034, SW043, SW099, SW100	12
Bremer River	SW025, SW036, SW039, SW040, SW045, SW047, SW050, SW051, SW052, SW088, SW089, SW090, SW091, SW094, SW098	15

Table 3 Sediment Sampling Locations

Area	Sediment Sampling Locations	Number of Locations
On-Base Drains	SD002, SD003, SD008, SD011, SD021, SD027, SD028, SD030, SD033, SD037, SD038, SD041, SD048, SD049, SD053, SD056, SD059, SD079, SD064, SD067, SD076, SD080	22
Warrill Creek	SD004, SD005, SD009, SD015, SD016, SD018, SD020, SD026, SD034, SD043, SD099, SD100	12
Bremer River	SD025, SD036, SD039, SD040, SD045, SD047, SD050, SD051, SD052, SD088, SD089, SD090, SD091, SD094, SD098	15

3.0 Methodology

The methodology used for the March/April 2021 sampling event was in accordance with the SAQP (AECOM, 2021a) and is summarised below. Deviations from the SAQP are discussed in **Section 3.6**.

3.1 Groundwater Sampling Methodology

The groundwater sampling methodology is outlined in **Table 4** below.

Table 4 Groundwater Sampling Methodology

Item	Details
Groundwater gauging	The depth to groundwater was measured in each monitoring well using an interface probe prior to the installation of HydraSleeves™, or if HydraSleeves were already installed, prior to retrieval of the HydraSleeve. Gauging was conducted in as short a time as possible, however, due to the number of wells and different requirements for accessing the monitoring well locations, the gauging took place over several days. Water level transducers are installed in seven monitoring wells to continuously record groundwater levels. Data collected since the previous OMP sampling event in October 2020 was downloaded.
Field parameters	Temperature, electrical conductivity (EC), dissolved oxygen (DO), oxidation-reduction potential (ORP), pH and observations of water quality were recorded for all groundwater samples.
Sampling methodology	Groundwater samples were collected from the majority of monitoring wells using no-purge methodology HydraSleeves™, which were installed within the screened interval of each well (based on a review of the well construction log) for a minimum of 24 hours prior to the sampling round. Once sampling was completed, new HydraSleeves™ were deployed at the screened interval depth in 18 of the monitoring wells in preparation for the next sampling round. HydraSleeves were not installed in 21 monitoring wells as they are regularly used for monitoring on other programs. There was insufficient groundwater in one monitoring well (MW054S) for HydraSleeve sampling. The groundwater sample was collected using a disposable single use HDPE ecobailer.
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), field blanks, rinsate samples and trip blanks. Refer to **Appendix C** for assessment of QA/QC sample data. Equipment calibration certificates are presented in **Appendix F**.
Sample analysis	All primary samples were submitted for analysis for the PFAS suite using the standard levels of detection. ALS Environmental (ALS) Brisbane, Queensland was used as the primary laboratory. The National Measurement Institute (NMI) of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for groundwater analyses are certified by the National Association of Testing Authorities (NATA). Chain of custody (COC) forms are presented in **Appendix D**, laboratory analytical certificates are presented in **Appendix E**.

3.2 Surface Water Sampling Methodology

The methodology used for the March/April 2021 sampling event was in accordance with the SAQP (AECOM, 2021a) and is summarised in **Table 5** below.

Table 5 Surface Water Sampling Methodology

Item	Details
Field parameters	Temperature, electrical conductivity, dissolved oxygen, oxidation-reduction potential, pH and observations of water quality were recorded for all surface water samples.
Sample Collection Methodology	Samples were collected from immediately below the water surface to minimise collection of sediment or floating materials in the samples. At each location, a new, laboratory supplied container was lowered into the water with the cap immediately applied once the container was full.
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), field blanks, rinsate samples and trip blanks. Refer to **Appendix C** for assessment of QAQC sample data. Equipment calibration certificates are presented in **Appendix F**.
Sample analysis	All primary samples were submitted for PFAS suite using the standard levels of detection. ALS Brisbane, Queensland was used as the primary laboratory. NMI of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for groundwater analyses were certified by the NATA. Chain of custody forms are presented in **Appendix D**, laboratory analytical certificates are presented in **Appendix E**.

3.3 Sediment Sampling Methodology

The methodology used for the March/April 2021 sampling event was in accordance with the SAQP (AECOM, 2021a) and is summarised in **Table 6** below.

Table 6 Sediment Sampling Methodology

Item	Details
Sample Collection Methodology	Samples representative of potentially deposited sediments were collected from within the water body where possible. Sediment samples were collected by hand using new laboratory supplied nitrile gloves and a new laboratory supplied container at each location.
Logging	Sediment characterisation were recorded for each sample.
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), field blanks, rinsate samples and trip blanks. Refer to **Appendix C** for assessment of QAQC sample data. Equipment calibration certificates are presented in **Appendix F**.
Sample analysis	All primary samples were submitted for PFAS suite using the standard levels of detection. ALS Brisbane, Queensland was used as the primary laboratory. NMI of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for groundwater analyses were certified by the NATA. Chain of custody forms are presented in **Appendix D**, laboratory analytical certificates are presented in **Appendix E**.

3.4 Adopted Screening Criteria

Adopted screening criteria references national guidance in the form of the PFAS National Environmental Management Plan, Defence estate and environmental strategies, and Defence PFAS-specific strategies and guidance. Guidance documents used to assess the dataset includes the following:

- PFAS NEMP, (HEPA 2020)
- Department of Health, 2019. *Health Based Guidance Values for PFAS for use in site investigations in Australia,* September 2019
- National Health and Medical Research Council (NHMRC), 2019. Guidance on PFAS in Recreational Water, August 2019 (NHMRC 2019)
- National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, as amended in 2013 (ASC NEPM, 2013).

In accordance with the OMP (Defence, 2020) and SAQP (AECOM, 2021a), the adopted PFAS screening criteria to assess the data generated as part of the OMP are presented in **Table 7** below.

Table 7 Summary of Adopted Screening Criteria

Pathway	Compound	Criteria	Comment / Reference
Human Health Receptors			
Drinking water - groundwater	PFOS + PFHxS	0.07 µg/L	The values are from the PFAS NEMP (HEPA, 2020). *All groundwater results will be compared to these criteria.*
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	The values are from NHMRC (2019). *All surface water results will be compared to these criteria.*
	PFOA	10 µg/L	
Ecological Receptors			
Freshwater (95% species protection values)	PFOS	0.13 µg/L	*The values are from the PFAS NEMP* (HEPA, 2020). *All surface water and groundwater results will be compared to these criteria.*
	PFOA	220 µg/L	
Freshwater (99% species protection values)	PFOS	0.00023 µg/L	
	PFOA	19 µg/L	

There are no current HEPA (2020) endorsed human health or ecological guideline values available for PFAS in sediment.

3.5 Data Quality Objectives and Data Validation

The data quality objectives and data quality indicators adopted for these works are presented in the SAQP (AECOM, 2021a).

Data validation assessment is provided in **Appendix C**.

Data validation procedure employed in the assessment of the field and laboratory QA/QC data indicated that the reported analytical results are representative of the sample locations and that the overall quality of the analytical data produced is acceptably reliable for the purpose of this report.

All data collected during this event has been reviewed and uploaded to the Defence ESdat database in accordance with Defence Contamination Management Manual (Defence, 2018) Annex L Guidance on Data Management (amended 2019) requirements.

3.6 Deviations from the SAQP

Table 8 lists the deviations from the SAQP (AECOM, 2021a) during this sampling event.

Table 8 Deviations from the SAQP during sampling event for March/April 2021

SAQP	March / April 2021 Sampling Event
Collection of groundwater samples at 46 locations	• Groundwater samples were not collected from four monitoring wells MW056, MW015, MW039, MW040, as they have been destroyed. • Groundwater samples were not collected from two monitoring wells MW008 and MW009 as they were damaged. • Groundwater samples were not collected from two monitoring wells, MW041 and MW049 as they could not be located due to the presence of long grass and a fallen tree at MW049.
Collection of co-located surface water and sediment samples at 49 locations	• A sample was not collected from SW048 that was dry.
Collection of groundwater samples from monitoring wells using no-purge HydraSleeves™	• The groundwater sample from monitoring well MW054S was collected via a grab sample using a decontaminated bailer due to insufficient water column for HydraSleeve sampling.

4.0 Field Observations and Results

The March / April 2021 sampling event was completed on 30 March, 12-16 April and 19 – 21 April 2021. The results are summarised in following sections.

4.1 Groundwater

4.1.1 Groundwater Observations and Field Measurements

Table 9 Groundwater Observations and Field Measurements

Item	Details
Access	All monitoring wells were accessible except for the following: • On-Site monitoring wells MW015, MW039, MW040 and MW056 have been destroyed and could not be sampled. • On-Site monitoring wells MW008 and MW009 are damaged and were unable to be sampled. • On-Site wells MW041 and MW049 could not be located due to the presence of long grass and a fallen tree at MW049. The groundwater sample from off-Site monitoring well MW054S was collected via a grab sample using a disposable single use HDPE ecobailer due to insufficient water column for HydraSleeve sampling.
Monitoring Well Network	The following five on-Site monitoring wells were noted to be damaged during the fieldworks: MW021 – gatic is cracked. The well was able to be sampled. MW031 – The ground surrounding the well has subsided causing the monument to sink. As a result, the lid cannot be closed. The well was able to be sampled. MW042 – The gatic concrete collar and lid were cracked and broken. The well was able to be sampled. MW047 – The gatic concrete collar was cracked and broken. The well was able to be sampled. MW050 – The gatic concrete collar, lid, and casing on MW050 were cracked and broken. The well was able to be sampled.
Field Observations	Groundwater from four monitoring wells had a sulphur odour (MW042, MW043, MW046 and MW056I). Groundwater from five monitoring wells had an organic odour (MW022, MW033, MW047, MW054D, MW057S). No other visible or olfactory indications of contamination were observed during the sampling of the other monitoring wells. Field observations are presented in **Table T1** in **Appendix B**.
Depth to Groundwater	Depth to groundwater in the Alluvium was between 3.745 and 15.604 metres below top of casing (mbtoc). Depth to groundwater in the Tertiary Formation was between 6.503 and 15.862 mbtoc. Depth to groundwater in the Walloon Coal Measures was between 6.311 and 24.257 mbtoc. Groundwater elevations in the Alluvium were between 8.143 and 17.738 mAHD. Groundwater elevations in the Tertiary Formation were between 5.164 and 28.726 mAHD. Groundwater elevations in the Walloon Coal Measures were between 15.481 and 34.562 mAHD. Groundwater gauging data are presented in **Table T1** in **Appendix B**. Water level transducer results for seven monitoring wells are presented in **Appendix G**.

<table>
<tr><th>Item</th><th>Details</th></tr>
<tr><td>Groundwater Flow Direction</td><td>Inferred groundwater contours and groundwater flow directions at the Site in April 2021 for the Alluvium/Tertiary Formation are shown on Figure 4 in Appendix A. The inferred local groundwater flow direction is towards the northeast and east in the direction of the Bremer River and Warrill Creek.</td></tr>
<tr><td>Groundwater Quality Parameter Field Measurements</td><td>Groundwater quality parameters were measured prior to collecting groundwater samples. The readings are presented in Table T1 in Appendix B and are summarised per geological unit in the table below:
<table>
<tr><th>Unit</th><th>Parameter</th><th>Min</th><th>Max</th><th>Comment</th></tr>
<tr><td>Alluvium</td><td>DO (mg/L)</td><td>0.18</td><td>2.43</td><td>Poor to moderately oxygenated</td></tr>
<tr><td></td><td>EC (µS/cm)</td><td>351.8</td><td>9,638</td><td>Fresh to brackish</td></tr>
<tr><td></td><td>pH</td><td>6.39</td><td>7.98</td><td>Near neutral to slightly alkaline</td></tr>
<tr><td></td><td>ORP (mV)</td><td>131.3</td><td>421.2</td><td>Mildly to moderately reducing</td></tr>
<tr><td></td><td>Temperature (°C)</td><td>19.9</td><td>25.7</td><td>-</td></tr>
<tr><td>Tertiary Formation</td><td>DO (mg/L)</td><td>0.3</td><td>1.09</td><td>Poor to mildly oxygenated</td></tr>
<tr><td></td><td>EC (µS/cm)</td><td>1,903</td><td>26,338</td><td>Brackish to saline</td></tr>
<tr><td></td><td>pH</td><td>6.54</td><td>7.55</td><td>Near neutral</td></tr>
<tr><td></td><td>ORP (mV)</td><td>122.4</td><td>305.7</td><td>Mildly to moderately reducing</td></tr>
<tr><td></td><td>Temperature (°C)</td><td>23.2</td><td>26.4</td><td>-</td></tr>
<tr><td>Walloon Coal Measures</td><td>DO (mg/L)</td><td>0.08</td><td>1.45</td><td>Poor to mildly oxygenated</td></tr>
<tr><td></td><td>EC (µS/cm)</td><td>318</td><td>22,840</td><td>Fresh to saline</td></tr>
<tr><td></td><td>pH</td><td>6.47</td><td>7.41</td><td>Near neutral</td></tr>
<tr><td></td><td>ORP (mV)</td><td>120.8</td><td>265.7</td><td>Mildly to moderately reducing</td></tr>
<tr><td></td><td>Temperature (°C)</td><td>22.0</td><td>25.2</td><td>-</td></tr>
</table></td></tr>
<tr><td>Weather Conditions</td><td>Weather conditions during groundwater sampling were generally hot and dry.</td></tr>
<tr><td>Estate Management Works or Training Activities</td><td>During the sampling event no notable estate works or training activities were observed in the vicinity of sampling locations.</td></tr>
</table>

4.1.2 Groundwater Analytical Results

The groundwater analytical results for PFAS from this sampling event are presented in **Table T2** in **Appendix B**. There were two first-time exceedances of the human health drinking water guideline value. The concentration of sum of PFHxS and PFOS in the sample from MW050 was 0.18 µg/L and the concentration of PFOA in the sample from MW022 was equal to the guideline value (0.56 µg/L). There were three first time detections of sum of PFHxS and PFOS in groundwater samples from MW002, MW012 and MW024. These are recorded in **Table 10** below and are displayed in **Figure 5, Appendix A**.

Concentrations of sum of PFHxS and PFOS in 20 of the 38 groundwater samples exceeded the drinking water guideline value with eight samples exceeding the PFOA guideline. All 29 groundwater samples that exceeded the limit of reporting exceeded the ecological guideline for PFOS for 99% protection of ecosystems with 16 of these samples also exceeding the 95% protection guideline value. The three samples with first-time detections of PFOS (MW002, MW012 and MW024) were also first-time exceedances of the ecological guideline for PFOS for 99% protection of freshwater ecosystems.

One groundwater sample exceeded the PFOA ecological guideline for 99% protection of freshwater species but this sample did not exceed the 95% protection guideline.

Table 10 First-time detections or exceedances of sum of PFHxS and PFOS or PFOA in groundwater

First time detection / exceedance	Ground-water Sampling location	Sum of PFHxS+PFOS concentration (µg/L)		PFOA concentration (µg/L)	
		March / April 2021	Historical maximum	March / April 2021	Historical maximum
First time detections of PFHxS+PFOS or PFOA in groundwater	MW002	0.02	<0.05	<0.01	<0.01
	MW012	0.01	<0.05	<0.01	<0.01
	MW024	0.04	<0.01	<0.01	<0.01
First time exceedance of human health drinking water guideline value	MW022	18.1	31.9	0.56	0.35
	MW050	0.30	0.02	<0.01	<0.01

Note: Blue shading indicates a sample with a first-time detection of PFOS+PFHxS or PFOA
Yellow shading indicates a sample with a first-time exceedance above human health drinking water guideline values (refer to Table 7).

4.2 Surface Water

4.2.1 Surface Water Observations and Field Measurements

Table 11 Surface Water Observations and Field Measurements

Item	Details
Access	All surface water sampling locations were accessed during the sampling event, with the exception of SW048 that was dry. SW048 is a drain sampling location.
Field Observations	Eight surface water samples had an organic odour: SW021, SW037, SW038, SW041, SW045, SW059, SW064 and SW079. Eight surface water samples had a sheen appearance: SW008, SW011, SW025, SW027, SW041, SW059, SW079 and SW080. No visual or olfactory indications contamination were observed during the sampling of the other surface water sampling locations. Field observations are reported in **Table T3**, **Appendix B**.

<table>
<tr><th>Item</th><th>Details</th></tr>
<tr><td>Surface Water Quality Parameter Field Measurements</td><td>Surface water quality parameters were measured prior to collecting surface water samples. The readings are presented in Table T3 in Appendix B and are summarised below:
<table>
<tr><th>Unit</th><th>Parameter</th><th>Min</th><th>Max</th><th>Comment</th></tr>
<tr><td rowspan="4">Drain</td><td>DO (mg/L)</td><td>0.66</td><td>7.45</td><td>Poorly to well oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>150</td><td>954</td><td>Fresh</td></tr>
<tr><td>pH</td><td>6.61</td><td>9.89</td><td>Near neutral to alkaline</td></tr>
<tr><td>ORP (mV)</td><td>71.4</td><td>320</td><td>Mildly to moderately reducing</td></tr>
<tr><td></td><td>Temperature (°C)</td><td>18.1</td><td>29.8</td><td>-</td></tr>
<tr><td rowspan="4">Warrill Creek</td><td>DO (mg/L)</td><td>5.0</td><td>5.97</td><td>Mildly to well oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>301</td><td>377.4</td><td>Fresh</td></tr>
<tr><td>pH</td><td>7.20</td><td>7.61</td><td>Near neutral to very slightly alkaline</td></tr>
<tr><td>ORP (mV)</td><td>307.9</td><td>379.3</td><td>Moderately reducing</td></tr>
<tr><td></td><td>Temperature (°C)</td><td>19.5</td><td>21.1</td><td>-</td></tr>
<tr><td rowspan="4">Bremer River</td><td>DO (mg/L)</td><td>1.57</td><td>5.90</td><td>Mildly to well oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>175.3</td><td>460.8</td><td>Fresh</td></tr>
<tr><td>pH</td><td>6.89</td><td>8.32</td><td>Near neutral to slightly alkaline</td></tr>
<tr><td>ORP (mV)</td><td>211.0</td><td>346</td><td>Moderately reducing</td></tr>
<tr><td></td><td>Temperature (°C)</td><td>19.5</td><td>25.3</td><td>-</td></tr>
</table></td></tr>
<tr><td>Weather Conditions</td><td>Weather conditions during groundwater sampling were generally hot and dry.</td></tr>
<tr><td>Estate Management Works or Training Activities</td><td>During the sampling event no notable estate works or training activities were observed in the vicinity of sampling locations.</td></tr>
</table>

4.2.2 Surface Water Analytical Results

The analytical results for PFAS in surface water from this sampling event are presented in **Table T4** in **Appendix B**. There were no first-time detections of PFHxS+PFOS and PFOA or first-time exceedances of the adopted human health or ecological guidelines compared to the historical dataset.

Concentrations of sum of PFHxS and PFOS in 16 of the 48 surface water samples exceeded the recreational water guideline value with none of the samples exceeding the PFOA guideline. All 38 surface water samples that exceeded the limit of reporting exceeded the ecological guideline for PFOS for 99% protection of ecosystems with 20 of these samples also exceeding the 95% protection guideline value. None of the samples exceeded the PFOA ecological guidelines for either 95% or 99% protection of freshwater species.

4.3 Sediment

4.3.1 Sediment Observations and Field Measurements

Table 12 Sediment Observations

Item	Details
Access	All sediment sample locations were accessible.
Field Observations	Sediment logging data are presented in **Table T5** in **Appendix B**. No visible or olfactory indications of contamination were observed during sampling at the sediment sampling locations.
Weather Conditions	Weather conditions during groundwater sampling were generally hot and dry.
Estate Management Works or Training Activities	During the sampling event no notable estate works or training activities were observed in the vicinity of sampling locations.

4.3.2 Sediment Analytical Results

The analytical results for PFAS in sediment from this sampling event are presented in **Table T6** in **Appendix B**. First-time detections from the historical dataset are recorded in **Table 13** below. The result is displayed in **Figure 5, Appendix A**.

Table 13 First-time detections of sum of PFHxS or PFOA in sediment

First time detection / exceedance	Ground-water Sampling location	Sum of PFHxS+PFOS concentration (µg/L)		PFOA concentration (µg/L)	
		March / April 2021	Historical maximum	March / April 2021	Historical maximum
First time detections of PFHxS+PFOS or PFOA in sediment	SD009	0.0033	0.0052	0.0002	<0.0002
	SD020	0.0093	0.0077	0.0004	<0.0002
	SD038	0.001	No historical data	<0.0002	No historical data
	SD091	0.0016	<0.0002	<0.0002	<0.0002

Note: Blue shading indicates a sample with a first-time detection of PFOS+PFHxS or PFOA

5.0 Summary and Next Sampling Event

5.1 Summary of Monitoring Event

A groundwater, surface water and sediment monitoring event was completed within the RAAF Base Amberley Management Area between 30 March, 12-16 April and 19 – 21 April 2021. The program included sampling of groundwater from 46 monitoring wells and 49 co-located surface water and sediment sampling locations.

Table 14 summarises the findings of the March / April 2021 sampling event and the recommended actions.

Table 14 Summary of Sampling Event

Item	Comment	Recommended Actions
Access to sampling locations	A total of 38 out of the 46 monitoring wells were accessible. Four on-Site wells (MW015, MW039, MW040, MW056) have been destroyed during construction of new infrastructure. Two on-Site wells were damaged and could not be sampled (MW008 and MW009). Two on-Site wells (MW041 and MW049) could not be located due to long grass and a fallen tree. The loss of these monitoring wells has the potential to impact the understanding of the distribution of PFAS in groundwater. All surface water sampling locations were accessed during the sampling event with the exception of one on-Site drain sampling location (SW048) which was dry. All sediment sampling locations were accessible.	The interpretative report (AECOM, 2021b) has recommended the installation of five new monitoring wells to replace destroyed/damaged wells. Sampling of on-Site drains should continue to be timed to occur after a rainfall event.
Monitoring well network condition	No issues were identified in 33 out of the 38 monitoring wells sampled. Slight damage was observed to five monitoring wells: • MW021 – gatic is cracked. • MW031 – The ground surrounding the well has subsided causing the monument to sink. As a result, the lid cannot be closed. The well was able to be sampled. • MW042 – The gatic concrete collar and lid were cracked and broken. The well was able to be sampled. • MW047 – The gatic concrete collar was cracked and broken. The well was able to be sampled. • MW050 – The gatic concrete collar, lid, and casing was cracked and broken. The well was able to be sampled.	Minor repairs are required to these monitoring wells, which should be addressed during the drilling of the replacement wells.

Item	Comment	Recommended Actions
Analytical Results	PFAS concentrations in 34 of the 38 groundwater samples were consistent with historical results. PFAS concentrations in all 48 surface water samples collected were consistent with historical results. PFAS concentrations in 48 of the 49 sediment samples were consistent with historical results.	Ongoing monitoring in accordance with the OMP.
First-time detections of Sum of PFHxS and PFOS or PFOA	Three first time detections of PFAS above the laboratory limit of reporting were recorded in groundwater samples from MW002, MW012 and MW024 at concentrations slightly above the laboratory limit of reporting. No first-time detections of PFAS above the laboratory limit of reporting were recorded in any of the surface water samples collected. Two of the 49 sediment samples recorded a first-time detection of PFOA (SD009 and SD020) and two sediment samples recorded first-time detections of sum of PFHxS and PFOS (SD038 and SD091). Results were reported at concentrations slightly above the limit of reporting.	Ongoing monitoring in accordance with the OMP.
First time exceedance of NEMP drinking water guideline values	Two groundwater samples reported first-time exceedances: • The concentration of sum of PFHxS and PFOS in MW050 (0.30 ug/L) exceeded the NEMP (HEPA, 2020) drinking water guideline value (0.07 µg/L) • The concentration of PFOA in MW022 (0.56 µg/L) was equal to the guideline value. However, sum of PFHxS and PFOS concentrations in this well have consistently exceeded the drinking water guideline value.	Ongoing monitoring in accordance with the OMP.

5.2 Upcoming Sampling Events

The next biannual sampling event is scheduled for October 2021.

5.3 Upcoming Annual Interpretive Report

The next annual interpretative report is scheduled to commence in January 2022.

6.0 References

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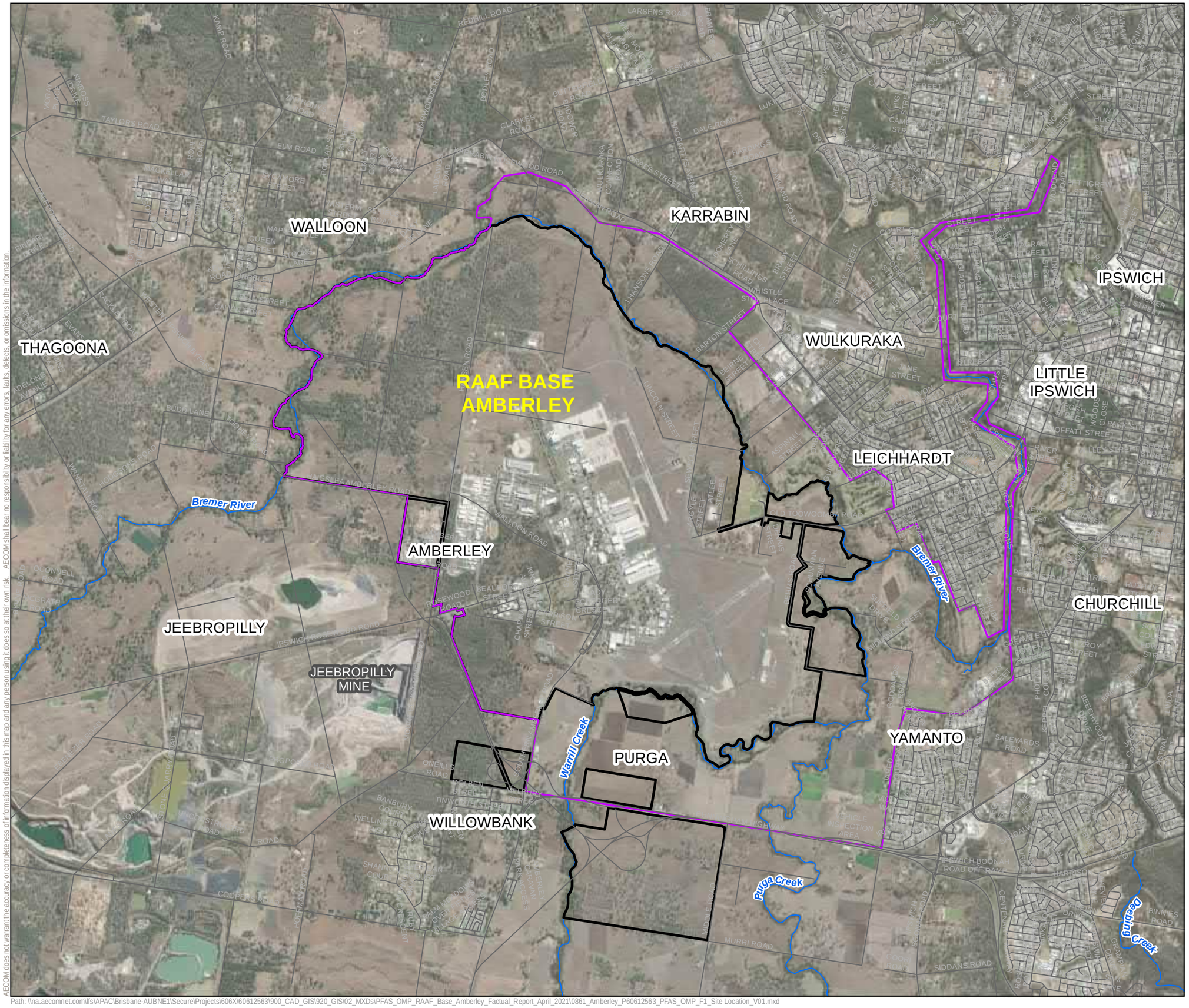
Appendix A

Figures

Appendix A Figures



LEGEND

- Management Area
- Base Boundary
- Watercourses

N

0 0.5 1 km

AECOM

SCALE	SIZE
1:38,000	A3
SHEET	COORDINATE SYSTEM
	GDA 1994 MGA Zone 56

TITLE

Figure 1: SITE LAYOUT

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY SAMPLING EVENT, FACTUAL REPORT: APRIL 2021

CLIENT

DEPARTMENT OF DEFENCE

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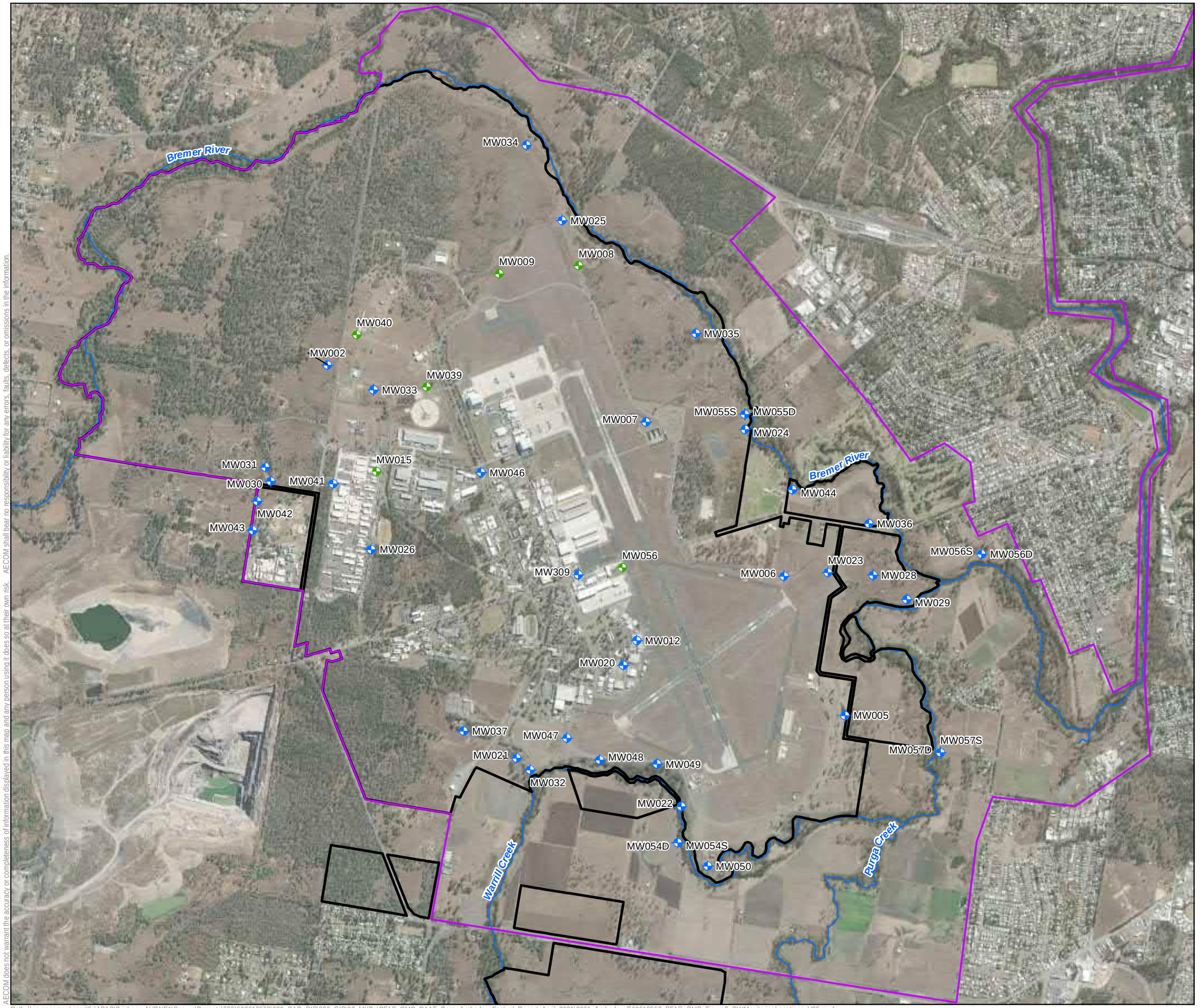

LEGEND

- Groundwater Monitoring Wells – sample not collected
- Groundwater Monitoring Wells – sample collected
- Management Area
- Base Boundary

N

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 2: Groundwater Monitoring Wells

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT,
FACTUAL REPORT: APRIL 2021

CLIENT

DEPARTMENT OF DEFENCE

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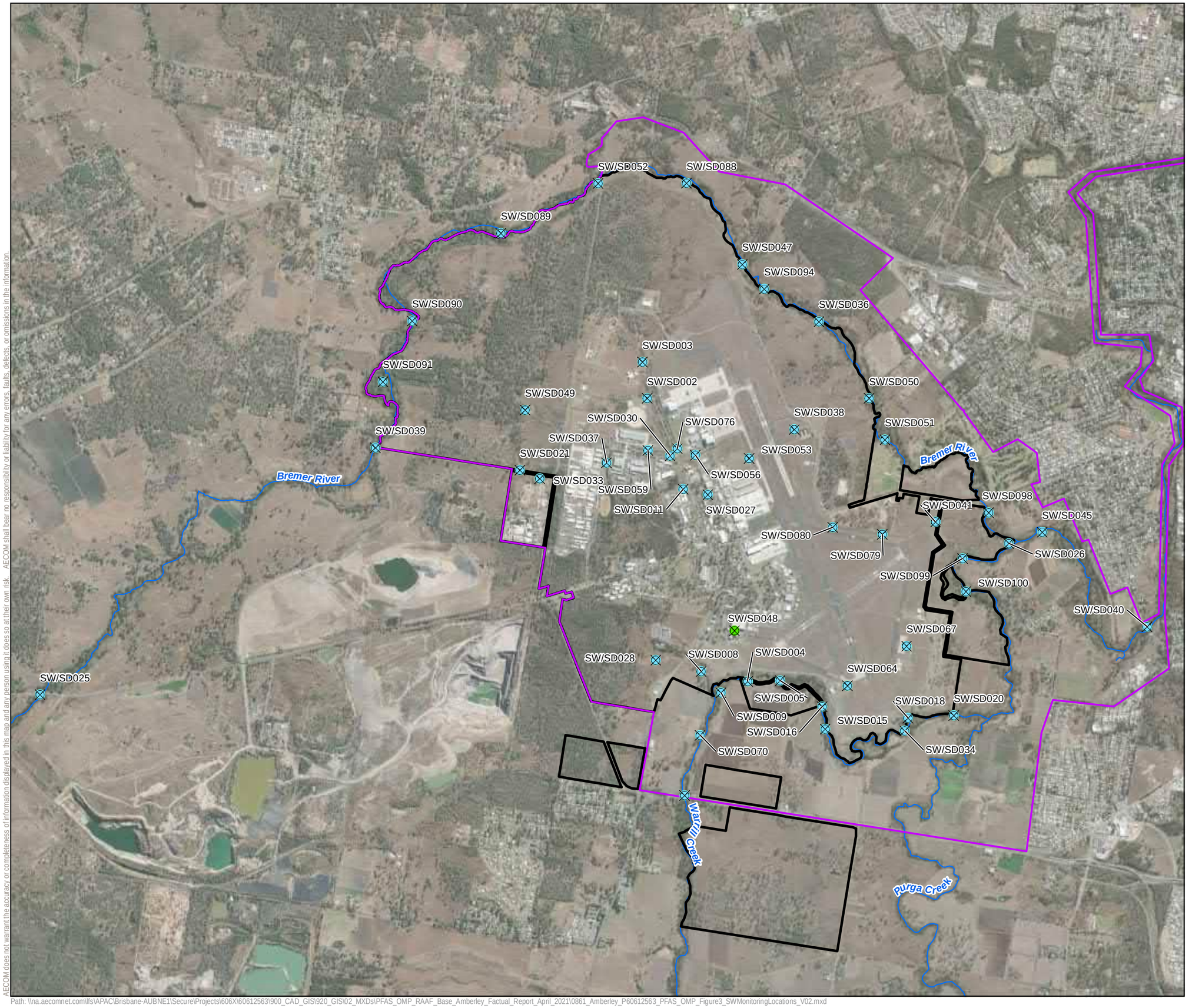

LEGEND

- Sediment- sample collected, Surface Water- sample not collected
- Surface Water / Sediment Sample
- Management Area
- Base Boundary

km
0 0.5 1

AECOM

SCALE 1:35,000
SIZE A3
SHEET
COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 3: Surface Water and Sediment Sampling Locations

PROJECT
PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT,
FACTUAL REPORT: APRIL 2021

CLIENT
DEPARTMENT OF DEFENCE

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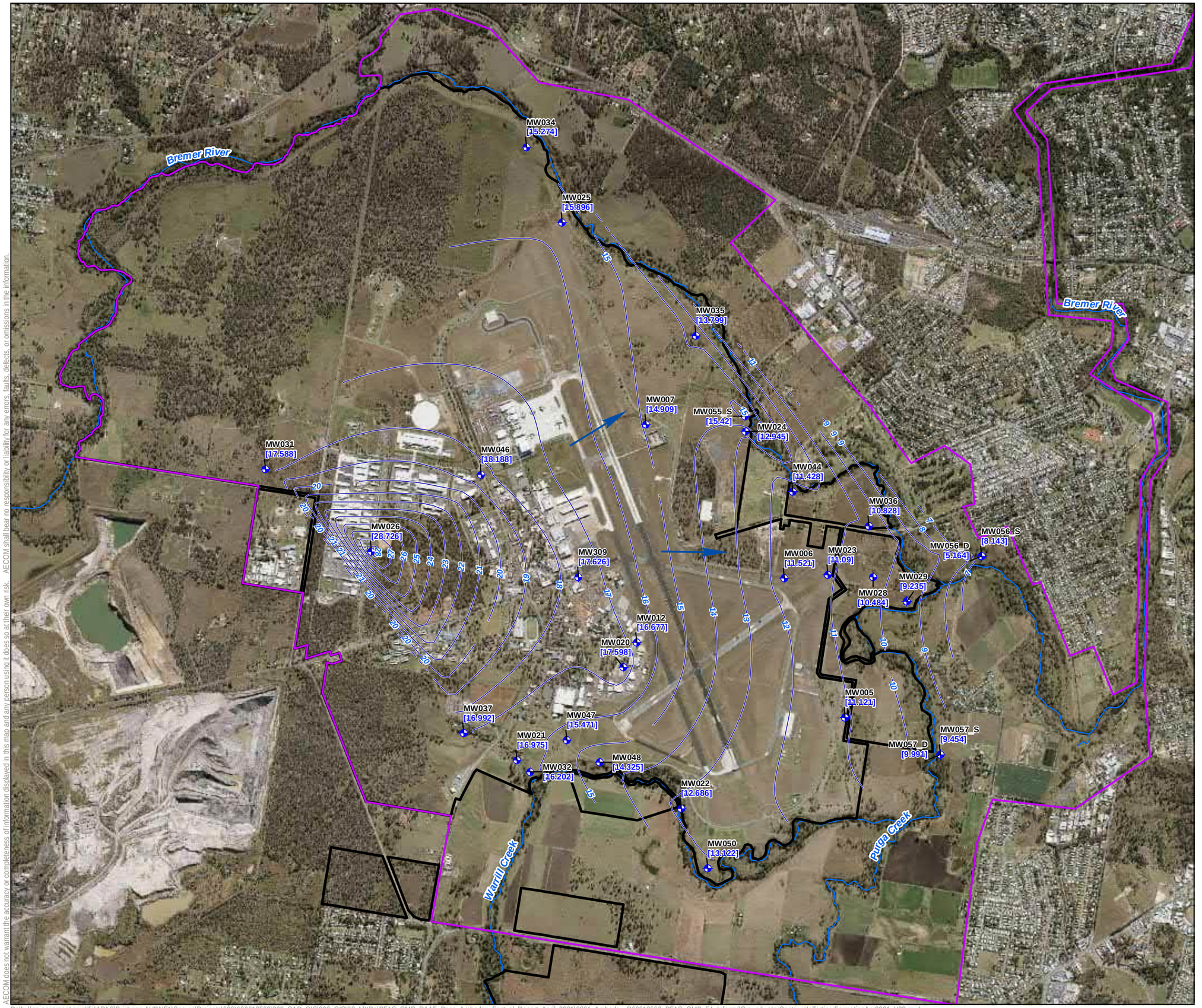

LEGEND

- Monitoring Wells
- Inferred Groundwater Contours
- Inferred Groundwater Flow Direction
- Watercourses
- Management Area
- Base Boundary

N

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 4: Inferred Groundwater Contours in the Alluvium/Tertiary Formation: April 2021

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY SAMPLING EVENT, FACTUAL REPORT: APRIL 2021

CLIENT

DEPARTMENT OF DEFENCE

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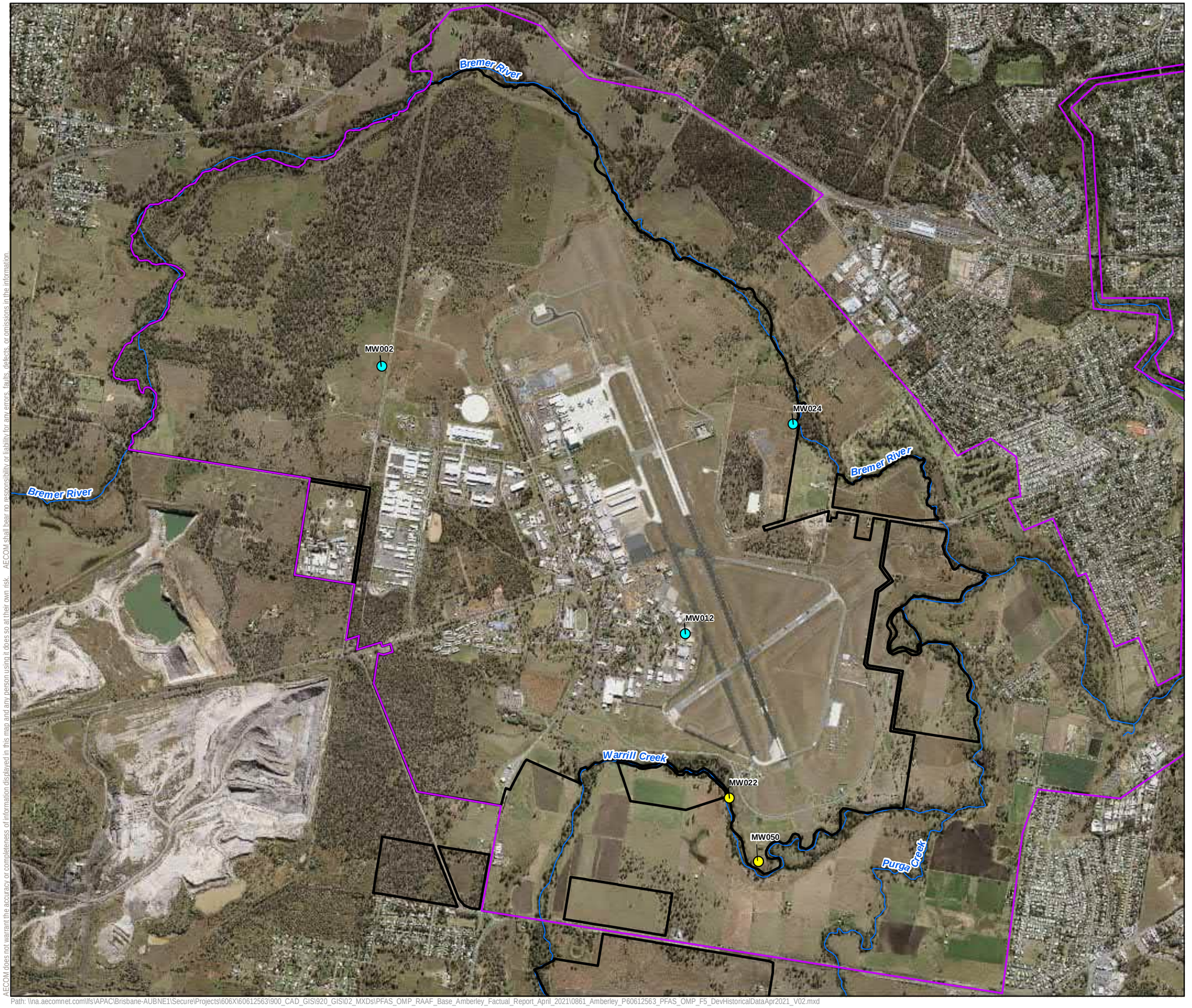

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LEGEND

Exceedance

- First time detection of PFHxS+PFOS or PFOA above LoR
- New exceedance of human health guideline values
- Management Area
- Base Boundary

N

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

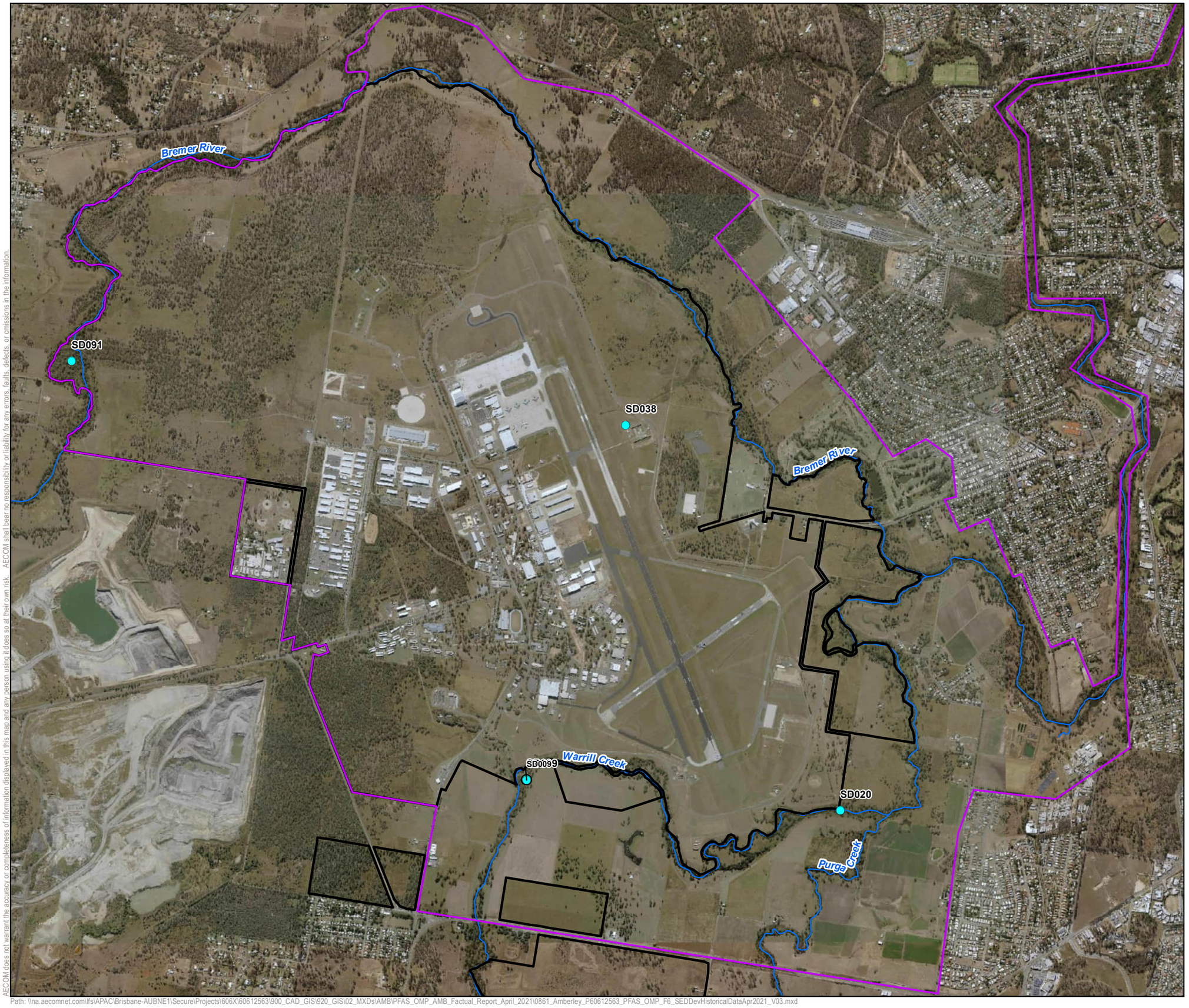
Figure 5: Groundwater Results: Deviations from Historical Data - April 2021

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT,
FACTUAL REPORT: APRIL 2021

CLIENT

DEPARTMENT OF DEFENCE



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LEGEND

Exceedance

- First time detection of PFHxS+PFOS or PFOA above LoR
- Management Area
- Base Boundary

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET -

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 6: Sediment Results: Deviations from Historical Data - April 2021

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT,
FACTUAL REPORT: APRIL 2021

CLIENT

DEPARTMENT OF DEFENCE

Appendix B

Tables

Appendix B Tables

Property ID	Well ID	Hydrasleeve Install Date	Hydrasleeve Sample Date	Aquifer	Well Depth (mbtoc)	Depth to Water (mbtoc)	TOC Elevation (mAHD)	Groundwater Elevation (mAHD)	Condition of Well	DO (mg/L)	EC (µS/cm)	pH	Er (mV)	Eh (mV)	Temp (°C)	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
0861	MW002	10/10/2020	21/04/2021	Walloon Coal Measures	24.14	19.604	Unknown	Unknown	Good	1.42	14186	6.62	-16.7	188.3	22.5	Low	Brown	No odour	No sheen	Hydrasleeve
0861	MW005	16/10/2020	21/04/2021	Alluvium	18.00	15.604	26.725	11.121	Good	0.46	2374	6.74	-16.4	188.6	24.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW006	21/10/2020	19/04/2021	Alluvium	13.34	10.416	21.937	11.521	Good	1.09	1390	7.98	70	275	25	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW007	19/10/2020	19/04/2021	Alluvium	10.70	8.299	23.208	14.909	Good	1.07	4143	7.34	178.7	383.7	25.7	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW008	-	-	-	-	-	-	-	Damaged	-	-	-	-	-	-	-	-	-	-	Not sampled- well damaged.
0861	MW009	-	-	-	-	-	-	-	Damaged	-	-	-	-	-	-	-	-	-	-	Not sampled- well damaged.
0861	MW012	13/10/2020	20/04/2021	Tertiary Formation	16.26	9.498	26.175	16.677	Good	0.4	14940	6.71	69.7	274.7	25.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW015	-	-	-	-	-	-	-	Damaged	-	-	-	-	-	-	-	-	-	-	Not sampled- well destroyed.
0861	MW020	13/10/2020	20/04/2021	Tertiary Formation	16.26	9.445	27.043	17.598	Good	0.3	15879	6.74	-30	175	25.4	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW021	14/10/2020	19/04/2021	Alluvium	5.52	3.745	20.72	16.975	Damaged	0.75	1104	7.55	127.2	332.2	23.2	Medium	Yellow / Brown	No odour	No sheen	Hydrasleeve. Gatic was cracked.
0861	MW022	12/10/2020	12/04/2021	Alluvium	9.78	6.964	19.65	12.686	Good	0.4	1346	6.66	35.9	240.9	21.7	Clear	Clear	Slight Organic Odour	No sheen	Hydrasleeve
0861	MW023	21/10/2020	21/04/2021	Alluvium	12.86	9.42	20.51	11.09	Good	0.42	9638	6.92	112.5	317.5	24.7	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW024	15/10/2020	20/04/2021	Alluvium	11.96	8.005	20.95	12.945	Good	0.24	3543	7.15	151.7	356.7	19.9	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW025	14/10/2020	16/04/2021	Alluvium	12.03	9.524	25.42	15.896	Good	2.43	1828	7.65	81.1	286.1	23.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW026	16/10/2020	20/04/2021	Tertiary Formation	17.51	11.514	40.24	28.726	Good	0.33	26338	6.54	21.6	226.6	23.2	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW028	15/10/2020	16/04/2021	Alluvium	13.79	10.346	20.83	10.484	Good	0.68	7166	7.25	133.6	338.6	23.1	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW029	15/10/2020	16/04/2021	Alluvium	11.21	8.995	18.23	9.235	Good	1.52	5474	7.32	130.6	335.6	23.7	Low	Light Brown	No odour	No sheen	Hydrasleeve
0861	MW030	13/10/2020	13/04/2021	Walloon Coal Measures	20.77	17.712	35.84	18.128	Good	1.45	21874	6.474	60.7	265.7	23.8	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW309	13/10/2020	20/04/2021	Tertiary Formation	19.3	10.981	28.607	17.626	Good	0.6	12844	6.87	-42	163	26.4	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW031	13/10/2020	13/04/2021	Tertiary Formation	18.16	15.862	33.45	17.588	Damaged	1.09	14833	6.77	7.4	212.4	23.4	Medium	Brown	No odour	No sheen	Hydrasleeve. Ground surrounding the well has subsided causing the monument to sink. Lid cannot be closed.
0861	MW032	12/10/2020	21/04/2021	Alluvium	14.68	10.078	26.28	16.202	Good	0.88	2935	6.84	119.1	324.1	24.4	Low	Clear	No odour	No sheen	Hydrasleeve
0861	MW033	19/10/2020	20/04/2021	Walloon Coal Measures	34.57	24.257	42.456	18.199	Good	0.08	15590	6.82	-82	123	23.8	Clear	Clear	Organic Odour	No sheen	Hydrasleeve
0861	MW034	13/10/2020	19/04/2021	Alluvium	10.7	9.031	24.305	15.274	Good	0.51	2059	7.36	124.1	329.1	24.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW035	14/10/2020	16/04/2021	Alluvium	14.53	11.2	24.999	13.799	Good	0.52	2812	6.67	113.3	318.3	23.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW036	15/10/2020	16/04/2021	Alluvium	14.95	13.212	24.04	10.828	Good	0.94	2108	7.3	111.3	316.3	23.7	Low	Light Brown	No odour	No sheen	Hydrasleeve
0861	MW037	12/10/2020	20/04/2021	Alluvium	11.00	8.227	25.219	16.992	Good	0.6	6658	7.14	-45.5	159.5	22.1	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW039	-	-	-	-	-	-	-	Damaged	-	-	-	-	-	-	-	-	-	-	Not sampled- well destroyed
0861	MW040	-	-	-	-	-	-	-	Damaged	-	-	-	-	-	-	-	-	-	-	Not sampled- well destroyed
0861	MW041	14/10/2020	-	Walloon Coal Measures	-	-	-	-	Unknown	-	-	-	-	-	-	-	-	-	-	Not sampled- well not located
0861	MW042	16/10/2020	15/04/2021	Walloon Coal Measures	28.9	22.257	40.036	17.779	Damaged	0.7	18958	6.78	-84.2	120.8	23.2	Low	Grey	Rotten egg smell (sulfurous)	No sheen	Hydrasleeve. Gatic concrete collar and lid were cracked.
0861	MW043	16/10/2020	15/04/2021	Walloon Coal Measures	20.72	14.62	49.182	34.562	Good	0.64	22840	6.73	-62.2	142.8	25.2	Low	Light Brown	Rotten egg smell (sulfurous)	No sheen	Hydrasleeve
0861	MW044	15/10/2020	21/04/2021	Alluvium	11.25	8.883	20.311	11.428	Good	0.18	901	7.5	-67.6	137.4	21.6	Medium	Brown	No odour	No sheen	Hydrasleeve
0861	MW046	19/10/2020	20/04/2021	Tertiary Formation	11.10	7.813	26.001	18.188	Good	1.04	3308	7.55	-63.7	141.3	25.2	Clear	Clear	Rotten egg smell (sulfurous)	No sheen	Hydrasleeve
0861	MW047	12/10/2020	20/04/2021	Tertiary Formation	13.22	10.794	26.265	15.471	Damaged	0.54	6732	7.42	-82.6	122.4	24.7	Clear	Clear	Organic Odour	No sheen	Hydrasleeve. Gatic concrete collar and lid were cracked.
0861	MW048	12/10/2020	16/04/2021	Alluvium	10.21	8.783	23.108	14.325	Good	1.25	351.8	6.42	216.2	421.2	22.8	Low	Light Brown	No odour	No sheen	Hydrasleeve
0861	MW049	12/10/2020	-	Alluvium	-	-	-	-	Unknown	-	-	-	-	-	-	-	-	-	-	Not sampled- well not located
0861	MW050	12/10/2020	21/04/2021	Alluvium	14.2	11.195	24.317	13.122	Damaged	2.01	641	7.53	36.6	241.6	23.4	Medium	Brown	No odour	No sheen	Hydrasleeve. Gatic concrete collar, lid, and casing were cracked.
0861	MW054S	Insufficient water	Insufficient water	Alluvium	6.92	6.579	24.317	17.738	Good	-	-	-	-	-	-	-	-		-	Bailer- no parameters
0861	MW054D	23/10/2020	21/04/2021	Walloon Coal Measures	21.00	6.311	24.317	18.006	Good	0.37	318	6.69	-22.5	182.5	23.1	Medium	Brown	Organic Odour	No sheen	Hydrasleeve
0861	MW055S	14/10/2020	16/04/2021	Alluvium	10.62	8.897	24.317	15.42	Good	0.22	1275	6.98	27.1	232.1	22.7	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW055D	14/10/2020	16/04/2021	Walloon Coal Measures	33.94	8.836	24.317	15.481	Good	0.54	7069	7.41	37.4	242.4	22	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW056	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Not sampled- well destroyed
0861	MW056S	15/10/2020	15/04/2021	Alluvium	9.42	6.935	15.078	8.143	Good	1.49	4010	7.05	-73.7	131.3	22.9	Low	Clear	No odour	No sheen	Hydrasleeve
0861	MW056I	15/10/2020	15/04/2021	Tertiary Formation	17.7	9.598	14.762	5.164	Good	0.47	1903	7.23	100.7	305.7	24.2	Clear	Clear	Rotten egg smell (sulfurous)	No sheen	Hydrasleeve
0861	MW057S	15/10/2020	21/04/2021	Alluvium	8.5	7.025	16.479	9.454	Good	1.2	475.9	6.39	18.2	223.2	20.2	Medium	Brown	Organic Odour	No sheen	Hydrasleeve
0861	MW057I	15/10/2020	21/04/2021	Tertiary Formation	15.5	6.503	16.494	9.991	Good	-	-	-	-	-	-	-	-	-	-	Hydrasleeve. Field parameters not available due to a data loss.

mbtoc - metres below top of casing
mAHD - metres above Australian Height Datum
TOC - top of casing
DO - Dissolved Oxygen
EC - Electrical Conductivity
Er - Uncorrected Oxidation Reduction Potential
Eh - Corrected Oxidation Reduction Potential
` - no data
Er converted to Eh by adding 205 based on a YSI with Ag/AgCl sensor calibrated to a 3.5 molar KCL solution
mg/L - milligrams per litre
µS/cm - microsiemens per centimetre
mV - millivolts
°C - degrees Celcius

		PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFDoDA	PFTeDA	PFTrDA	PFUnDA	FOSA	EtFOSE	MeFOSE	EtFOSA	MeFOSA	EtFOSAA	MFOSAA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.1	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.05	0.02	0.02	0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.01
NEMP (2020) Human Health Drinking Water		**0.07**											**0.56**																		
NHMRC (2019) Human Health Recreational Water		**2.0**											**10.0**																		
NEMP (2020) Freshwater 99% Species Protection							*0.00023*						*19*																		
NEMP (2020) Freshwater 95% Species Protection							***0.13***						***220***																		

Location ID	Sample ID	Sample Date	Lab Report No.																													
MW002	0861_MW002_210413	13/04/2021	EB2111121	0.02	<0.02	<0.02	<0.02	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
MW005	0861_MW005_210421	21/04/2021	EB2111121	0.06	<0.02	<0.02	0.04	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06
MW006	0861_MW006_210421	21/04/2021	EB2111121	**55.1**	1.16	1.63	7.67	0.99	***47.4***	<0.02	0.6	1.8	3.42	0.76	**1.07**	0.07	<0.02	<0.02	<0.05	<0.02	<0.02	0.35	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.36	0.06	<0.05	67.3
MW007	0861_MW007_210419	19/04/2021	EB2111121	**48.4**	2	2.87	15.6	1.83	***32.8***	<0.02	0.5	0.8	3.71	0.57	**1.26**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.53	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.14	<0.05	<0.05	62.6
MW012	0861_MW012_210420	20/04/2021	EB2111121	0.01	<0.02	<0.02	<0.02	<0.02	***0.01***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01
MW020	0861_MW020_210420	20/04/2021	EB2111121	**40.9**	1.1	2.02	10.6	1.7	***30.3***	<0.02	0.5	2.07	3.29	1.2	**2.07**	0.18	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.34	<0.05	<0.05	55.4
MW021	0861_MW021_210419	19/04/2021	EB2111121	**81.3**	1.19	2.52	19.5	1.7	***61.8***	<0.02	0.3	0.57	2.82	0.68	**2.19**	0.07	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	93.4
MW022	0861_MW022_210416	16/04/2021	EB2111121	**18.1**	1.26	1.92	16.3	0.32	***1.83***	<0.02	0.4	0.26	1.26	0.24	**0.56**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	24.4
MW023	0861_MW023_210421	21/04/2021	EB2111121	**1.15**	0.1	0.13	0.84	0.02	***0.31***	<0.02	<0.1	0.03	0.07	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.51
MW024	0861_MW024_210420	20/04/2021	EB2111121	0.04	<0.02	<0.02	<0.02	<0.02	***0.04***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04
MW025	0861_MW025_210416	16/04/2021	EB2111121	**0.95**	0.14	0.12	0.58	0.02	***0.37***	<0.02	<0.1	0.05	0.12	0.02	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.45
MW026	0861_MW026_210421	20/04/2021	EB2111121	0.02	<0.02	<0.02	<0.02	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
MW028	0861_MW028_210416	16/04/2021	EB2111121	**66.5**	3.49	3.72	25.3	2.54	***41.2***	<0.08	0.9	1.1	5.45	1	**1.98**	<0.08	<0.08	<0.08	<0.21	<0.08	<0.08	<0.08	<0.21	<0.21	<0.21	<0.21	<0.08	<0.08	<0.08	<0.08	<0.08	<0.08	86.7
MW029	0861_MW029_210416	16/04/2021	EB2111121	**8.27**	0.55	0.68	3.98	0.3	***4.29***	<0.02	0.1	0.15	0.71	0.12	0.2	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.1
MW030	0861_MW030_210413	13/04/2021	EB2111121	**2.96**	1.45	1.1	2.96	0.05	*<0.06*	<0.02	0.4	0.61	2.84	0.46	0.31	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	10.3
MW031	0861_MW031_210413	13/04/2021	EB2111121	0.02	<0.02	<0.02	<0.02	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
MW032	0861_MW032_210421	21/04/2021	EB2111121	**31.8**	1.72	1.85	8.64	0.93	***23.2***	0.03	0.5	0.8	3.88	1.04	**2.13**	0.07	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	44.9
MW033	0861_MW033_210420	20/04/2021	EB2111121	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW034	0861_MW034_210419	19/04/2021	EB2111121	**0.59**	<0.02	<0.02	<0.02	<0.02	***0.59***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.59
MW035	0861_MW035_210416	16/04/2021	EB2111121	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW036	0861_MW036_210416	16/04/2021	EB2111121	0.06	<0.02	<0.02	0.04	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06
MW037	0861_MW037_210420	20/04/2021	EB2111121	**3.63**	1.38	1.46	3.57	<0.02	***0.06***	<0.02	<0.1	0.18	0.9	0.12	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.7
MW042	0861_MW042_210415	15/04/2021	EB2111121	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW043	0861_MW043_210415	15/04/2021	EB2111121	0.01	<0.02	<0.02	<0.02	<0.02	***0.01***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01
MW044	0861_MW044_210421	21/04/2021	EB2111121	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW046	0861_MW046_210421	20/04/2021	EB2111121	**420**	18.5	29.1	127	13.6	***293***	<0.05	14.7	39.5	69.7	18.9	**40.3**	0.72	0.09	<0.05	<0.12	<0.05	<0.05	<0.05	<0.12	<0.12	<0.12	<0.12	<0.05	<0.05	0.09	38.5	2.98	<0.05	707
MW047	0861_MW047_210420	20/04/2021	EB2111121	**2.64**	0.22	0.19	0.18	0.08	***2.46***	<0.02	0.2	0.19	0.24	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.8
MW048	0861_MW048_210416	16/04/2021	EB2111121	**7.99**	0.47	0.47	3.22	0.14	***4.77***	<0.02	0.1	0.18	0.6	0.09	0.15	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	10.2
MW050	0861_MW050_210421	21/04/2021	EB2111121	**0.3**	0.03	<0.02	0.07	<0.02	***0.23***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.33
MW054S	0861_MW054S_210421	21/04/2021	EB2111111	**0.1**	<0.05	<0.02	<0.02	<0.02	***0.1***	<0.02	<0.2	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.1
MW054D	0861_MW054D_210421	21/04/2021	EB2111111	0.01	<0.02	<0.02	<0.02	<0.02	***0.01***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01
MW055S	0861_MW055S_210416	16/04/2021	EB2111121	**0.81**	<0.02	0.07	0.41	0.03	***0.4***	<0.02	<0.1	<0.02	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.91
MW055D	0861_MW055D_210416	16/04/2021	EB2111121	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.19	<0.05	<0.05	0.19
MW056S	0861_MW056S_210415	15/04/2021	EB2111112	0.01	<0.02	<0.02	<0.02	<0.02	***0.01***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01
MW056I	0861_MW056I_210415	15/04/2021	EB2111112	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW057S	0861_MW057S_210421	21/04/2021	EB2111112	**0.08**	0.02	<0.02	0.05	<0.02	***0.03***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.1
MW057I	0861_MW057I_210421	21/04/2021	EB2111112	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW309	0861_MW309_210420	20/04/2021	EB2111121	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01

LOR is limit of reporting
µg/L is micrograms per litre
'-' denotes no analysis undertaken
'<' denotes concentration is less than
NEMP is National Environmental Mangement Plan
NHMRC is National Health Medical Research Council
Denotes first time detection above LOR
Denotes new exceedance of human health guideline values

Property ID	Location ID	Sample Date	Location	DO (PPM or mg/L	EC (µS/cm)	pH	Er (mV)	Eh (mV)	Temp (°C)	Turbidity	Odour	Sheen	Colour	Sample Method/Comments
0861	SW002	30/03/2021	Drain	2.61	290.7	7.34	99.4	304.4	24.2	Low	No odour	No sheen	Clear	Grab sample
0861	SW003	30/03/2021	Drain	5.25	433.8	7.7	99.5	304.5	27.1	Clear	No odour	No sheen	Clear	Grab sample
0861	SW004	14/04/2021	Warrill Creek	5.97	371.3	7.47	143.3	348.3	20.5	Medium	No odour	No sheen	Brown	Grab sample
0861	SW005	12/04/2021	Warrill Creek	5.21	303.5	7.61	102.9	307.9	21	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW008	14/04/2021	Drain	1.88	234.3	6.93	1.6	206.6	18.4	Low	No odour	Biosheen Appearance	Brown	Grab sample
0861	SW009	14/04/2021	Warrill Creek	5.92	377.4	7.42	174.3	379.3	20.5	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW011	30/03/2021	Drain	7.45	526	8.01	95.9	300.9	25.7	Low	No odour	Biosheen Appearance	Brown	Grab sample
0861	SW015	12/04/2021	Warrill Creek	5.06	303.5	7.23	115.7	320.7	21	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW016	12/04/2021	Warrill Creek	5.02	306.8	7.31	115.2	320.2	21.1	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW018	12/04/2021	Warrill Creek	5	300.9	7.22	119.9	324.9	20.9	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW020	12/04/2021	Warrill Creek	5.53	300.5	7.28	117.7	322.7	20.9	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW021	30/03/2021	Drain	3.00	768	7.73	104.8	309.8	23.4	Low	Slight Organic Odour	No sheen	Clear	Grab sample
0861	SW025	21/04/2021	Bremer River	4.82	248	7.6	33.5	238.5	22.8	Turbid	No odour	Slight biosheen	Brown	Grab sample
0861	SW026	13/04/2021	Warrill Creek	5.39	327.3	7.58	105.6	310.6	24.1	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW027	30/03/2021	Drain	3.63	664	7.4	99.2	304.2	23.4	Clear	No odour	Biosheen Appearance	Clear	Grab sample
0861	SW028	12/04/2021	Drain	3.36	150.3	6.75	120.2	325.2	24.1	Medium	No odour	No sheen	Brown	Grab sample
0861	SW030	30/03/2021	Drain	5.02	530	8.26	88.2	293.2	28.6	Low	No odour	No sheen	Clear	Grab sample
0861	SW033	14/04/2021	Drain	2.95	954	7.58	99.5	304.5	18.1	Clear	No odour	No sheen	Brown	Grab sample
0861	SW034	12/04/2021	Warrill Creek	5.08	301.4	7.24	120.3	325.3	21	Medium	No odour	No sheen	Brown	Grab sample
0861	SW036	14/04/2021	Bremer River	2.26	224.5	6.95	134.5	339.5	20.5	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW037	30/03/2021	Drain	0.66	609	6.96	26.3	231.3	27.1	Turbid	Slight Organic Odour	No sheen	Clear/light brown	Grab sample
0861	SW038	30/03/2021	Drain	4.04	760	7.63	116.4	321.4	29.8	Low	Slight Organic Odour	No sheen	Clear	Grab sample
0861	SW039	30/03/2021	Bremer River	5	175.3	7.18	68.9	273.9	25.3	Low	No odour	No sheen	Clear	Grab sample
0861	SW040	15/04/2021	Bremer River	3.9	460.8	8.32	20	225	23.2	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW041	30/03/2021	Drain	1.35	335.1	9.89	23.7	228.7	27.9	Turbid	Slight Organic Odour	Biosheen Appearance	Clear	Grab sample
0861	SW043	14/04/2021	Warrill Creek	5.73	362.1	7.43	105.3	310.3	19.5	Medium	No odour	No sheen	Brown	Grab sample
0861	SW045	15/04/2021	Bremer River	4.41	338.1	7.96	83.5	288.5	19.8	Turbid	Organic Odour	No sheen	Brown	Grab sample
0861	SW047	14/04/2021	Bremer River	3.51	223.5	7.04	115.5	320.5	20.1	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW048	12/04/2021	Drain	-	-	-	-	-	-	-	-	-	-	Dry- no sample collected.
0861	SW049	13/04/2021	Drain	6.2	248.3	7.42	110.4	315.4	27.3	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW050	14/04/2021	Bremer River	3.04	226.4	7.18	125.4	330.4	20.2	Medium	No odour	No sheen	Brown	Grab sample
0861	SW051	12/04/2021	Bremer River	3.33	219.6	7.01	76.8	281.8	20.5	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW052	13/04/2021	Bremer River	3.71	220	7.14	106.6	311.6	21.5	Medium	No odour	No sheen	Brown	Grab sample
0861	SW053	19/04/2021	Drain	6.66	372.2	9.15	126.7	331.7	26.6	Low	No odour	No sheen	Yellowish Brown	Grab sample
0861	SW056	30/03/2021	Drain	3.49	406.9	7.51	96.2	301.2	26.9	Low	No odour	No sheen	Clear	Grab sample
0861	SW059	30/03/2021	Drain	-	927	7.29	-133.6	71.4	26.5	Turbid	Slight Organic Odour	Biosheen Appearance	Clear/light brown	Grab sample. DO field parameter not available due to data loss.
0861	SW064	18/04/2021	Drain	0.84	248.1	6.61	92.1	297.1	19.7	Turbid	Organic Odour	No sheen	Brown	Grab sample
0861	SW067	19/04/2021	Drain	1.65	216.6	7.12	130.1	335.1	20.1	Turbid	No odour	No sheen	Yellowish Brown	Grab sample
0861	SW076	30/03/2021	Drain	1.88	537	7.3	100.8	305.8	25.1	Low	No odour	No sheen	Clear	Grab sample
0861	SW079	19/04/2021	Drain	6.46	376	7.3	164.7	369.7	21.2	Medium	Organic Odour	Biosheen Appearance	Yellowish Brown	Grab sample
0861	SW080	19/04/2021	Drain	4.67	646	7.76	149.3	354.3	24.3	Medium	No odour	Biosheen Appearance	Yellowish Brown	Grab sample
0861	SW088	13/04/2021	Bremer River	3.19	223.8	7.07	116.8	321.8	21.5	Medium	No odour	No sheen	Brown	Grab sample
0861	SW089	13/04/2021	Bremer River	3.17	227.6	7.51	6	211	21.9	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW090	13/04/2021	Bremer River	2.66	217.4	7.15	98.6	303.6	20.5	Medium	No odour	No sheen	Brown	Grab sample
0861	SW091	13/04/2021	Bremer River	2.81	217.4	7.03	113.6	318.6	20.3	Medium	No odour	No sheen	Brown	Grab sample
0861	SW094	14/04/2021	Bremer River	1.57	330.5	6.89	133.6	338.6	19.5	Medium	No odour	No sheen	Brown	Grab sample
0861	SW098	15/04/2021	Bremer River	3.34	238.8	7.92	57.8	262.8	20.1	Medium	No odour	No sheen	Brown	Grab sample
0861	SW099	13/04/2021	Warrill Creek	5.75	359.4	7.37	118.3	323.3	20.8	Medium	No odour	No sheen	Brown	Grab sample
0861	SW100	13/04/2021	Warrill Creek	5.55	356.8	7.5	111.1	316.1	20.5	Medium	No odour	No sheen	Brown	Grab sample

DO - Dissolved Oxygen
EC - Electrical Conductivity
Er - Uncorrected Oxidation Reduction Potential
Eh - Corrected Oxidation Reduction Potential
` - no data
Er converted to Eh by adding 205 based on a YSI with Ag/AgCl sensor calibrated to a 3.5 molar KCL solution
mg/L - milligrams per litre
µS/cm - microsiemens per centimetre
mV - millivolts
°C - degrees Celcius

		PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFDoDA	PFTeDA	PFTrDA	PFUnDA	FOSA	EtFOSE	MeFOSE	EtFOSA	MeFOSA	EtFOSAA	MFOSAA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.1	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.01
NHMRC (2019) Human Health Recreational Water		**2.0**											**10.0**																		
NEMP (2018) Freshwater 99% Species Protection							*0.00023*						*19*																		
NEMP (2018) Freshwater 95% Species Protection							***0.13***						***220***																		
Location ID	**Sample ID**	**Sample Date**	**Lab Report No.**																													
SW002	0861_SW002_210330	30/03/2021	EB2108857	**2.66**	0.17	0.16	1.13	0.05	***1.53***	<0.02	0.3	0.75	0.74	0.25	0.22	0.03	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.19	<0.05	<0.05	5.52
SW003	0861_SW003_210330	30/03/2021	EB2108857	**3.1**	0.28	0.28	1.71	0.06	***1.39***	<0.02	0.3	0.76	0.9	0.21	0.19	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.18	<0.05	<0.05	6.26
SW004	0861_SW004_210414	14/04/2021	EB2111121	0.1	<0.02	<0.02	0.04	<0.02	***0.06***	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12
SW005	0861_SW005_210412	12/04/2021	EB2111121	0.05	<0.02	<0.02	<0.02	<0.02	***0.05***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05
SW008	0861_SW008_210415	15/04/2021	EB2111121	0.53	0.04	0.03	0.16	<0.02	***0.37***	<0.02	<0.1	0.02	0.03	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.67
SW009	0861_SW009_210414	14/04/2021	EB2111121	0.06	<0.02	<0.02	0.02	<0.02	***0.04***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06
SW011	0861_SW011_210330	30/03/2021	EB2108857	**9.72**	0.37	0.42	4.44	0.19	***5.28***	<0.02	0.4	1.06	1.39	0.36	0.36	0.05	0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	3.33	0.1	<0.05	17.8
SW015	0861_SW015_210412	12/04/2021	EB2111121	0.05	<0.02	<0.02	0.02	<0.02	***0.03***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05
SW016	0861_SW016_210412	12/04/2021	EB2111121	0.06	<0.02	<0.02	0.02	<0.02	***0.04***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06
SW018	0861_SW018_210412	12/04/2021	EB2111121	0.02	<0.02	<0.02	<0.02	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
SW020	0861_SW020_210412	12/04/2021	EB2111121	0.02	<0.02	<0.02	<0.02	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
SW021	0861_SW021_210330	30/03/2021	EB2108857	**39.4**	5.85	5.28	23	0.73	***16.4***	0.05	2.8	5.89	18.5	2.65	3.25	0.08	0.02	<0.02	<0.05	<0.02	<0.02	0.03	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	84.6
SW025	0861_SW025_210421	21/04/2021	EB2111112	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW026	0861_SW026_210416	16/04/2021	EB2111112	0.03	<0.02	<0.02	<0.02	<0.02	***0.03***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03
SW027	0861_SW027_210330	30/03/2021	EB2108857	**3.39**	0.26	0.29	2.18	0.08	***1.21***	<0.02	0.2	0.38	0.64	0.16	0.17	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.57
SW028	0861_SW028_210412	12/04/2021	EB2111121	0.76	0.07	0.04	0.31	<0.02	***0.45***	<0.02	<0.1	0.03	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.48	<0.05	<0.05	1.43
SW030	0861_SW030_210330	30/03/2021	EB2108857	**9.64**	0.47	0.52	5.18	0.23	***4.46***	<0.02	0.4	1.17	1.67	0.38	0.36	0.03	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	1.99	<0.05	<0.05	16.9
SW033	0861_SW033_210415	15/04/2021	EB2111121	**108**	6.82	8	44.2	1.52	***63.8***	0.66	3.2	6.11	23.3	3.35	7.7	0.16	<0.05	<0.05	<0.12	<0.05	<0.05	0.14	<0.12	<0.12	<0.12	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	169
SW034	0861_SW034_210412	12/04/2021	EB2111121	0.02	<0.02	<0.02	<0.02	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.2	<0.05	<0.05	0.22
SW036	0861_SW036_210414	14/04/2021	EB2111121	0.01	<0.02	<0.02	<0.02	<0.02	***0.01***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01
SW037	0861_SW037_210330	30/03/2021	EB2108857	**9.57**	0.93	0.83	5.23	0.2	***4.34***	<0.1	<0.5	1.36	2	0.42	0.58	<0.1	<0.1	<0.1	<0.25	<0.1	<0.1	<0.1	<0.25	<0.25	<0.25	<0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	15.9
SW038	0861_SW038_210330	30/03/2021	EB2108857	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW039	0861_SW039_210330	30/03/2021	EB2108857	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW040	0861_SW040_210415	15/04/2021	EB2111112	0.09	<0.02	<0.02	0.03	<0.02	***0.06***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09
SW041	0861_SW041_210330	30/03/2021	EB2108857	**17.3**	1.23	1.18	8.44	0.5	***8.83***	<0.1	<0.5	0.68	2.26	0.35	0.48	<0.1	<0.1	<0.1	<0.25	<0.1	<0.1	<0.1	<0.25	<0.25	<0.25	<0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	24
SW043	0861_SW043_210415	15/04/2021	EB2111112	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW045	0861_SW045_210415	15/04/2021	EB2111112	0.07	<0.02	<0.02	0.02	<0.02	***0.05***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07
SW047	0861_SW047_210414	14/04/2021	EB2111121	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW049	0861_SW049_210413	13/04/2021	EB2111121	**4.62**	0.34	0.35	1.89	0.09	***2.73***	<0.02	0.3	0.37	0.73	0.15	0.3	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.25
SW050	0861_SW050_210414	14/04/2021	EB2111121	0.02	<0.02	<0.02	<0.02	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
SW051	0861_SW051_210413	13/04/2021	EB2111121	0.04	<0.02	<0.02	<0.02	<0.02	***0.04***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04
SW052	0861_SW052_210413	13/04/2021	EB2111121	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW053	0861_SW053_210419	19/04/2021	EB2111121	0.14	<0.02	<0.02	0.04	<0.02	***0.1***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.14
SW056	0861_SW056_210330	30/03/2021	EB2108857	**2.63**	0.25	0.24	1.61	0.05	***1.02***	<0.02	0.3	0.77	0.83	0.18	0.18	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.25	<0.05	<0.05	5.68
SW059	0861_SW059_210330	30/03/2021	EB2108857	**30.7**	4	4.03	21.3	0.69	***9.38***	<0.1	3	9.12	14.6	2.79	3.62	0.12	<0.1	<0.1	<0.25	<0.1	<0.1	<0.1	<0.25	<0.25	<0.25	<0.25	<0.1	<0.1	<0.1	3.08	<0.1	<0.1	75.7
SW064	0861_SW064_210419	19/04/2021	EB2111121	1.71	0.32	0.19	0.84	0.03	***0.87***	<0.02	0.2	0.14	0.27	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.92
SW067	0861_SW067_210419	19/04/2021	EB2111121	**32.9**	2.63	2.46	15.6	0.88	***17.3***	0.07	1.6	1.93	3.35	0.36	0.54	0.06	0.03	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	46.8
SW076	0861_SW076_210330	30/03/2021	EB2108857	**4.72**	0.49	0.45	2.74	0.1	***1.98***	<0.1	0.6	1.8	1.6	0.38	0.32	<0.1	<0.1	<0.1	<0.25	<0.1	<0.1	<0.1	<0.25	<0.25	<0.25	<0.25	<0.1	<0.1	<0.1	2.26	<0.1	<0.1	12.7
SW079	0861_SW079_210419	19/04/2021	EB2111121	**26.5**	1.9	3.26	13.7	1.02	***12.8***	0.1	0.4	1.06	3.59	0.6	0.89	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	39.3
SW080	0861_SW080_210419	19/04/2021	EB2111121	**55.9**	3.46	3.62	26	1.6	***29.9***	<0.05	0.8	1.44	6.2	0.88	1.5	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.12	<0.12	<0.12	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	75.4
SW088	0861_SW088_210413	13/04/2021	EB2111121	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW089	0861_SW089_210413	13/04/2021	EB2111121	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW090	0861_SW090_210414	14/04/2021	EB2111121	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW091	0861_SW091_210414	14/04/2021	EB2111121	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW094	0861_SW094_210414	14/04/2021	EB2111121	1.47	0.11	0.12	0.65	0.03	***0.82***	<0.02	0.2	0.36	0.3	0.11	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.8
SW098	0861_SW098_210415	15/04/2021	EB2111112	0.04	<0.02	<0.02	<0.02	<0.02	***0.04***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04
SW099	0861_SW099_210413	13/04/2021	EB2111121	0.08	<0.02	<0.02	0.02	<0.02	***0.06***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08
SW100	0861_SW100_210413	13/04/2021	EB2111121	0.06	<0.02	<0.02	0.02	<0.02	***0.04***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06

NEMP is National Environmental Mangement Plan
NHMRC is National Health Medical Research Council
Denotes first time detection above LOR
Denotes new exceedance of human health guideline values

Property ID	Location ID	Sample Date	Sample Description	Odour
0861	SD002	30/03/2021	Silty CLAY, brown/grey, very moist, high plasticity, firm, with medium-coarse grained sand and organic matter.	No odour
0861	SD003	30/03/2021	Silty CLAY, brown, moist, medium plasticity, soft, with roots and organic matter.	No odour
0861	SD004	14/04/2021	Clayey SAND, brown, wet, soft, fine-coarse grained, with medium-coarse sub-angular gravels, trace of organic matter.	No odour
0861	SD005	12/04/2021	Silty CAND, brown, moist, fine-coarse grained, with roots and organic matter.	No odour
0861	SD008	15/04/2021	CLAY, brown, wet, medium plasticity, soft, trace of fine grained sand.	No odour
0861	SD009	14/04/2021	Silty CLAY, brown, wet, medium plasticity, soft, with roots and organic matter and coarse grained sand.	No odour
0861	SD011	30/03/2021	Silty CLAY, brown, moist, medium plasticity, soft, with roots and organic matter.	No odour
0861	SD015	12/04/2021	Silty CLAY, dark brown, wet, medium plasticity, soft, with roots and organic matter.	No odour
0861	SD016	12/04/2021	Silty CLAY, dark brown, wet, medium plasticity, soft, with roots and organic matter.	No odour
0861	SD018	12/04/2021	Silty CLAY, brown, wet, medium plasticity, with roots and organic matter.	No odour
0861	SD020	12/04/2021	Silty CLAY, brown, wet, medium plasticity, with roots and organic matter.	No odour
0861	SD021	30/03/2021	Sandy GRAVEL, black, saturated, loose, medium-coarse angular gravels, coarse sand.	No odour
0861	SD025	21/04/2021	Clayey SAND, dark brown, wet, loose, medium-coarse grained, with organic matter.	No odour
0861	SD026	16/04/2021	Silty CLAY, brown, wet, medium plasticity, soft, with roots and organic matter.	No odour
0861	SD027	30/03/2021	Silty CLAY, brown, moist, medium plasticity, soft, with roots and organic matter.	No odour
0861	SD028	12/04/2021	CLAY, grey, wet, medium plasticity, soft, with organic matter.	No odour
0861	SD030	30/03/2021	Silty CLAY, dark brown, slightly moist, medium plasticity, firm, with roots and organic matter.	No odour
0861	SD033	15/04/2021	Sandy CLAY, brown/grey, wet, high plasticity, soft, fine-medium grained sand, with roots and organic matter.	No odour
0861	SD034	12/04/2021	Silty CLAY, brown, wet, medium plasticity, with roots and organic matter.	No odour
0861	SD036	14/04/2021	Silty CLAY, brown, wet, medium plasticity, soft, with leaf litter, trace of sand.	No odour
0861	SD037	30/03/2021	Silty CLAY, brown, moist, medium plasticity, soft, with roots and organic matter.	No odour
0861	SD038	30/03/2021	Silty CLAY, grey, wet, high plasticity, firm, intermixed grass roots.	No odour
0861	SD039	30/03/2021	Silty CLAY, brown, moist, medium plasticity, soft, with roots and organic matter.	No odour
0861	SD040	15/04/2021	Clayey SAND, dark brown, wet, loose, medium-coarse grained, with organic matter.	No odour
0861	SD041	30/03/2021	Organic matter, roots/leaves, trace of Silty CLAY.	No odour
0861	SD043	15/04/2021	Silty CLAY, brown, wet, medium plasticity, soft, trace of coarse grained sand, coarse-medium grained sub-angular gravels and organic matter.	No odour
0861	SD045	15/04/2021	Sandy CLAY, brown/grey, wet, high plasticity, soft, medium-coarse grained sand, with roots and organic matter.	No odour
0861	SD047	14/04/2021	Silty CLAY, grey, wet, medium plasticity, very soft, with organics.	No odour
0861	SD048	12/04/2021	Clayey SAND, dark brownh, moist, firm, fine to coarse grained, with organic matter.	No odour
0861	SD049	13/04/2021	Silty CLAY, brown, wet, medium plasticity, soft, with roots and organic matter, trace of fine grained sand.	No odour
0861	SD050	14/04/2021	Silty CLAY, brown, wet, medium plasticity, soft, with leaf litter, trace of sand.	No odour
0861	SD051	13/04/2021	Silty CLAY, brown, wet, medium plasticity, soft, with roots and organic matter.	No odour
0861	SD052	13/04/2021	Silty CLAY, brown, wet, medium plasticity, soft, with roots and organic matter.	No odour
0861	SD053	19/04/2021	CLAY, dark brown/grey, moist, high plasticity, soft, with of fine-medium grained sand and organic matter.	No odour
0861	SD056	30/03/2021	Silty CLAY, dark grey, wet, low plasticity, soft, with organics.	No odour
0861	SD059	30/03/2021	Silty CLAY, brown, dry, low plasticity, firm, with organics.	No odour
0861	SD064	19/04/2021	CLAY, dark brown, wet, medium plasticity, soft, trace of fine grained sand and organic matter.	No odour
0861	SD067	19/04/2021	CLAY, dark brown, wet, medium plasticity, soft, with fine-medium grained angular gravels, trace of fine grained sand and organic matter.	No odour
0861	SD076	30/03/2021	SAND, dark brown, wet, loose, coarse grained,	No odour
0861	SD079	19/04/2021	CLAY, dark brown/grey, moist, high plasticity, soft, trace of fine grained sand and organic matter.	No odour
0861	SD080	19/04/2021	CLAY, dark brown/grey, moist, high plasticity, soft, trace of fine-medium grained sand and organic matter.	No odour
0861	SD088	13/04/2021	Silty CLAY, brown, wet, medium plasticity, soft, with roots and organic matter.	No odour
0861	SD089	13/04/2021	Silty CLAY, grey-brown, orange-brown mottle, dry, medium plasticity, hard, with organics.	No odour
0861	SD090	14/04/2021	Silty CLAY, brown, wet, medium plasticity, soft, with leaf litter.	No odour
0861	SD091	14/04/2021	Silty CLAY, brown, wet, medium plasticity, soft, with leaf litter, trace of sand.	No odour
0861	SD094	14/04/2021	Clayey SAND, brown, wet, loose, coarse grained.	No odour
0861	SD098	15/04/2021	CLAY, brown, medium plasticity, soft, trace of fine grained sand and organic matter.	No odour
0861	SD099	13/04/2021	Silty CLAY, brown, wet, medium plasticity, soft, with roots and organic matter.	No odour
0861	SD100	13/04/2021	Silty CLAY, brown, wet, medium plasticity, soft, with roots and organic matter.	No odour

	PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFDoDA	PFTeDA	PFTrDA	PFUnDA	FOSA	EtFOSE	MeFOSE	EtFOSA	MeFOSA	EtFOSAA	MFOSAA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFAS
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002

Location ID	Sample ID	Sample Date	Lab Report No.																												
SD002	0861_SD002_210330	30/03/2021	EB2108857	0.0086	<0.0005	<0.0005	0.0006	<0.0005	0.008	0.0011	<0.002	0.001	0.0008	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0123
SD003	0861_SD003_210330	30/03/2021	EB2108857	0.0115	<0.0005	<0.0005	0.0023	<0.0005	0.0092	<0.0005	<0.002	0.0006	0.0011	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0005	<0.0005	<0.0013	<0.0013	<0.0013	<0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0132
SD004	0861_SD004_210414	14/04/2021	EB2111116	0.0062	<0.0002	<0.0002	0.0003	<0.0002	0.0059	<0.011	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0062
SD005	0861_SD005_210412	12/04/2021	EB2111116	0.0215	<0.0005	<0.0005	0.0014	<0.0005	0.0201	<0.0038	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0005	<0.0005	<0.0013	<0.0013	<0.0013	<0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.003	<0.0005	0.0215
SD008	0861_SD008_210415	15/04/2021	EB2111116	0.156	<0.0005	<0.0005	0.0033	<0.0005	0.153	0.007	<0.002	<0.0005	0.0006	<0.0005	0.0006	0.0008	0.0009	<0.0005	<0.0012	<0.0005	0.0014	0.0008	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.168
SD009	0861_SD009_210414	14/04/2021	EB2111116	0.0033	<0.0002	<0.0002	0.0003	<0.0002	0.003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0035
SD011	0861_SD011_210330	30/03/2021	EB2108857	0.782	<0.001	<0.001	0.0345	0.0031	0.747	<0.001	<0.005	0.0048	0.0044	0.0027	0.004	0.0033	0.003	0.0033	<0.0025	<0.001	0.0033	<0.001	<0.0025	<0.0025	<0.0025	<0.0025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.813
SD015	0861_SD015_210412	12/04/2021	EB2111116	0.006	<0.0002	<0.0002	0.0003	<0.0002	0.0057	<0.0006	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.006
SD016	0861_SD016_210412	12/04/2021	EB2111116	0.0046	<0.0005	<0.0005	<0.0005	<0.0005	0.0046	<0.0014	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0046
SD018	0861_SD018_210412	12/04/2021	EB2111116	0.0104	<0.0005	<0.0005	<0.0005	<0.0005	0.0104	0.0287	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0005	<0.0005	<0.0013	<0.0013	<0.0013	<0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0391
SD020	0861_SD020_210412	12/04/2021	EB2111116	0.0093	<0.0002	<0.0002	0.0008	<0.0002	0.0085	0.001	<0.001	<0.0002	0.0004	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0114
SD021	0861_SD021_210330	30/03/2021	EB2108857	0.0222	0.0009	0.0011	0.0052	<0.0002	0.017	0.0012	<0.001	0.0011	0.0035	0.0007	0.0009	<0.0002	<0.0002	0.0003	<0.0005	0.0003	0.0002	0.0003	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0327
SD025	0861_SD025_210421	21/04/2021	EB2111112	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD026	0861_SD026_210416	16/04/2021	EB2111112	0.0092	<0.0002	<0.0002	0.0003	<0.0002	0.0089	<0.0015	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0092
SD027	0861_SD027_210330	30/03/2021	EB2108857	0.0673	<0.0005	0.0005	0.0065	0.0006	0.0608	<0.0005	<0.002	0.0027	0.0031	0.0008	0.0018	<0.0005	0.0008	0.0016	<0.0012	<0.0005	0.001	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0802
SD028	0861_SD028_210412	12/04/2021	EB2111116	0.122	<0.0005	<0.0005	0.0036	<0.0005	0.118	0.0023	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0005	<0.0005	<0.0013	<0.0013	<0.0013	<0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.124
SD030	0861_SD030_210330	30/03/2021	EB2108857	0.114	<0.0026	<0.0026	0.0076	<0.0026	0.106	<0.0026	<0.013	0.0057	0.0033	<0.0026	<0.0026	<0.0026	<0.0026	0.0043	<0.0064	<0.0026	0.0038	<0.0026	<0.0064	<0.0064	<0.0064	<0.0064	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	0.131
SD033	0861_SD033_210415	15/04/2021	EB2111116	1	0.0045	0.008	0.0884	0.0066	0.915	0.063	<0.005	0.0066	0.0237	0.0054	0.0195	0.0019	0.0014	0.0045	<0.0025	0.0029	0.0024	0.0179	<0.0025	<0.0025	<0.0025	<0.0025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	1.17
SD034	0861_SD034_210412	12/04/2021	EB2111116	0.0323	<0.0002	<0.0002	0.0005	<0.0002	0.0318	<0.0008	<0.001	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0328
SD036	0861_SD036_210414	14/04/2021	EB2111116	0.0046	<0.0005	<0.0005	<0.0005	<0.0005	0.0046	<0.0038	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0046
SD037	0861_SD037_210330	30/03/2021	EB2108857	0.0956	<0.0005	<0.0005	0.0043	0.0006	0.0913	0.0009	<0.002	0.004	0.0023	0.0012	0.0011	0.0008	0.0024	0.001	<0.0012	<0.0005	0.0014	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	0.112
SD038	0861_SD038_210330	30/03/2021	EB2108857	0.001	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.001
SD039	0861_SD039_210330	30/03/2021	EB2108857	0.002	<0.0005	<0.0005	<0.0005	<0.0005	0.002	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0006	<0.0012	<0.0005	<0.0042	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.002
SD040	0861_SD040_210415	15/04/2021	EB2111112	0.0009	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0009
SD041	0861_SD041_210330	30/03/2021	EB2108857	0.713	0.004	0.0049	0.0584	0.0086	0.655	0.0193	<0.006	0.0058	0.0088	0.0026	0.0105	<0.0012	<0.0012	0.014	<0.0031	0.0019	0.0079	0.004	<0.0031	<0.0031	<0.0031	<0.0031	<0.0012	<0.0012	<0.0012	<0.0012	0.004	0.0021	0.812
SD043	0861_SD043_210415	15/04/2021	EB2111112	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD045	0861_SD045_210415	15/04/2021	EB2111112	0.0034	<0.0002	<0.0002	0.0003	<0.0002	0.0031	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0034
SD047	0861_SD047_210414	14/04/2021	EB2111116	0.0034	<0.0005	<0.0005	<0.0005	<0.0005	0.0034	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0034
SD048	0861_SD048_210412	12/04/2021	EB2111116	0.662	<0.0005	<0.0005	0.0124	0.0028	0.65	0.0065	<0.002	<0.0005	0.0009	<0.0005	0.0007	<0.0005	<0.0005	0.0007	0.0013	0.0012	0.0006	0.002	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	0.0024	0.0023	0.0008	0.685
SD049	0861_SD049_210413	13/04/2021	EB2111116	0.0412	0.0003	0.0002	0.0026	0.0002	0.0386	<0.0002	<0.001	0.0003	0.0009	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0436
SD050	0861_SD050_210414	14/04/2021	EB2111116	0.0094	<0.0005	<0.0005	<0.0005	<0.0005	0.0094	<0.0005	<0.002	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0094
SD051	0861_SD051_210413	13/04/2021	EB2111116	0.0397	<0.0002	<0.0002	0.0013	0.0002	0.0384	0.002	<0.001	0.0004	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0005	0.0002	<0.0002	0.0014	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0448
SD052	0861_SD052_210413	13/04/2021	EB2111116	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0002
SD053	0861_SD053_210419	19/04/2021	EB2111116	0.0089	<0.0002	<0.0002	0.0012	<0.0002	0.0077	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0089
SD056	0861_SD056_210330	30/03/2021	EB2108857	0.641	<0.001	0.0014	0.0302	0.0091	0.611	<0.001	<0.005	0.0041	0.0058	0.0035	0.0068	0.0036	0.0031	<0.001	<0.0025	<0.001	0.0018	<0.001	<0.0025	<0.0025	<0.0025	<0.0025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.68
SD059	0861_SD059_210330	30/03/2021	EB2108857	0.264	0.0022	0.002	0.0199	0.0024	0.244	0.0013	<0.002	0.0036	0.0059	0.002	0.0046	0.0012	0.0014	0.0008	<0.0012	<0.0005	0.0014	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	0.0008	<0.0005	<0.0005	0.294
SD064	0861_SD064_210419	19/04/2021	EB2111116	0.113	<0.001	<0.001	0.007	<0.001	0.106	<0.0018	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.001	<0.001	<0.0025	<0.0025	<0.0025	<0.0025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.113
SD067	0861_SD067_210419	19/04/2021	EB2111116	0.341	0.0015	0.0017	0.0228	0.0027	0.318	0.0112	<0.002	0.0008	0.002	<0.0005	0.0008	0.0006	0.0009	0.0027	<0.0012	0.0009	0.0014	0.0043	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.372
SD076	0861_SD076_210330	30/03/2021	EB2108857	0.0926	0.0013	0.0012	0.0131	0.0013	0.0795	<0.001	<0.005	0.0035	0.0038	0.0012	0.0016	<0.001	<0.001	0.0022	<0.0025	<0.001	0.0016	<0.001	<0.0025	<0.0025	<0.0025	<0.0025	<0.001	<0.001	<0.001	0.0014	<0.001	<0.001	0.112
SD079	0861_SD079_210419	19/04/2021	EB2111116	0.254	0.0016	0.0023	0.0237	0.003	0.23	0.0017	<0.005	0.0014	0.0032	<0.001	0.0016	<0.001	<0.001	0.0016	<0.0025	<0.001	0.0012	<0.001	<0.0025	<0.0025	<0.0025	<0.0025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.271
SD080	0861_SD080_210419	19/04/2021	EB2111116	0.924	0.0063	0.0092	0.118	0.0156	0.806	0.0111	<0.005	0.0032	0.0123	0.0029	0.009	0.0052	0.0103	0.014	0.0029	0.0046	0.0169	0.005	<0.0024	<0.0024	<0.0024	<0.0024	<0.001	<0.001	<0.001	<0.001	0.01	0.0024	1.06
SD088	0861_SD088_210413	13/04/2021	EB2111116	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD089	0861_SD089_210413	13/04/2021	EB2111116	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SD090	0861_SD090_210414	14/04/2021	EB2111116	0.0008	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0008
SD091	0861_SD091_210414	14/04/2021	EB2111116	0.0016	<0.0005	<0.0005	<0.0005	<0.0005	0.0016	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0016
SD094	0861_SD094_210414	14/04/2021	EB2111116	0.0065	<0.0002	<0.0002	0.0004	<0.0002	0.0061	<0.0002	<0.001	0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0069
SD098	0861_SD098_210415	15/04/2021	EB2111112	0.0079	<0.0002	<0.0002	0.0004	<0.0002	0.0075	<0.001	<0.001	0.0006	0.0005	0.0003	<0.0004	<0.0002	<0.0002	<0.0004	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0093
SD099	0861_SD099_210413	13/04/2021	EB2111116	0.0077	<0.0005	<0.0005	<0.0005	<0.0005	0.0077	0.0067	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0144
SD100	0861_SD100_210413	13/04/2021	EB2111116	0.0042	<0.0002	<0.0002	<0.0002	<0.0002	0.0042	<0.0006	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0042

LOR is limit of reporting
mg/kg is milligrams per kilogram
µg/kg is micrograms per kilogram
'-' denotes no analysis undertaken
'<' denotes concentration is less than
Denotes first time detection above LOR

Appendix C

Analytical Data Validation

Appendix C Analytical Data Validation

DATA VALIDATION REPORT

Project No.:	60612563	**Validation by:** CM		**Date:**	26/05/2021
Client:	Department of Defence				
Site:	Royal Australian Airforce Base, Amberley				
Matrix type:	Groundwater, surface water, sediment	**Data verified by:** FL		**Date:**	10/06/2021
No. of primary samples:	38 groundwater, 48 surface water, 49 sediment				
Laboratory:	ALS (Brisbane), NMI (Sydney)	**Project Manager:** JP			
Lab reference:	EB2108857; EB2111111; EB2111112; EB2111116; EB2111121; AECO06_210407; AECO06_210428_1				

Key Issues:	No QA/QC issues were identified in the field or laboratory datasets that could have a material implication on data interpretation and therefore decision-making on the project. The data are considered appropriate for use to meet the project objectives.

Field QA/QC

Sampling personnel	Sampling was conducted by Camden McCosker, Bianca Burke and Mary MacElroy on 30 March, 12-16 April and 19 – 21 April 2021.
Sampling Methodology	Samples were collected using appropriate methods as identified within the main body of the report and as presented in the SAQP.
Chain of Custody (COC)	COC documents completed as per AECOM procedures.
Rinsate Blank	Rinsate blank samples were collected at a frequency of one per day of sampling where appropriate (eight in total). Rinsates were collected from the decontaminated interface probe or the water quality meter. On days where dedicated sampling equipment was used to obtain samples (e.g. hydrasleeves were being collected) no rinsates samples were required. Concentrations reported below the LOR for all analytes tested. See Table C4.
Field Blanks	Field blank samples were collected at a frequency of one per day of sampling (nine in total) by filling sample containers with laboratory supplied deionised water in the field. All field blanks reported concentrations below the LOR for the analytes tested. See Table C4.
Trip Blanks	Trip blank samples were present during the transport of samples during the sampling between 30 March, 12-16 April and 19 – 21 April 2021. Four water trip blanks and three soil trip blanks all reported concentrations below the LOR, see Table C5.
Frequency of field QC	Field duplicate (inter-laboratory duplicates) and triplicates (inter-laboratory duplicates) were collected. Ten duplicates/triplicate sets for groundwater and surface water (see Tables C1 and C2) and six duplicate/triplicate sets for sediment. The frequency of field QC achieves the expected frequency for each media type. The target frequency of one in ten primary samples was achieved for all matrices.
Handling and preservation	Primary, duplicate and triplicate samples were received preserved and chilled at the laboratory. All samples were received at the laboratory in appropriate sample containers with no sample container non-compliances noted.

Laboratory QA/QC

Tests requested/reported	Samples were analysed and reported as requested on the COC.

Holding time compliance	Samples were extracted and analysed within recommended holding times, except: • EB2111116 – moisture content in SD048; SD015; SD018; SD020; SD005; SD016; SD034 and SD028 (1 day overdue) • EB2111121 – moisture content in QC140 (1 day overdue) The holding time non-compliances are not expected to impact data quality. All PFAS analyses (the key contaminant) were analysed within the minimum hold times.
Laboratory Accreditation	The laboratory analysis was conducted by ALS Environmental Pty Ltd (Brisbane) a National Association of Testing Authorities (NATA) accredited laboratory. The triplicate samples were analysed at the National Measurement Institute (Sydney), also a NATA accredited laboratory.

Frequency of laboratory QC	The laboratory reported a sufficient frequency of quality control samples to assess whether the results have been reported to an acceptable accuracy and precision, except:
	• Matrix spikes and laboratory duplicates for PFAS (both 0.00%) which is below the expected rate of 5.0% (for matrix spikes) and 10.00% (duplicates) in the following batches:
	  • EB2111111 (20 samples in batch)
	  • EB2111112 (20 samples in batch)
	• Laboratory duplicates (water) for PFAS (5.26%) which is below the expected rate of 10.00% in EB2108857 (19 samples in batch)
	• Matrix spikes and laboratory duplicates for PFAS (with rates of 3.0% and 4.00%) which are below the expected rate of 10.00% and 5.0% respectively in EB2111121 (100 samples in batch)
	
	The reason for insufficient matrix spikes and laboratory duplicates is unknown as the laboratory was provided with sufficient sample volume, however as all other QC results met control limits this is not expected to impact data quality.

Method Blank	No method blank non-compliances were reported.
Laboratory duplicate RPDs	Laboratory duplicate Relative Percentage Differences (RPD) were within control limits for all samples except: • EB2111121, RPDs exceeded the LOR based limits in sample 0861_QC146_210419 (PFOS); • EB2111116, RPDs exceeded the LOR based limits in sample 0861_SD048_210412 (PFHxS, PFOS and PFDS) The reason given by the lab for these RPD exceedances is “Lab QC failed”.
Laboratory control spike recovery	No non-compliances were reported for Laboratory Control Spikes (LCS).
Matrix spike recovery	All matrix spike (MS) recoveries (where reported) were within control limits, except: • EB2108857: MS recovery for PFOS in 0861_QC138_210330 was not determined as the background level was greater or equal to 4x spike level. • EB2111112: MS recovery for PFOS in sample 0861_SD098_210415 was not determined as the background level was greater or equal to 4x spike level • EB2111116: MS recovery for PFOS in samples 0861_SD005_210412 and anonymous sample were not determined as the background level was greater or equal to 4x spike level. The date indicate that matrix interference has occurred in some samples. These non-conformances are not expected to impact data quality.
Surrogate spike recovery	Surrogate spike recoveries were within control limits for all samples.
QA/QC Data Evaluation	
Comparison of Field Observations and Laboratory Results	No anomalous results between field observations and analysis results were noted.

Data transcription	A random 10% check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by AECOM.
Limits of reporting	Limits of Reporting (LORs) were sufficiently low to enable assessment against adopted screening levels except for PFOS for NEMP (HEPA, 2020) ecological guideline values for the 99% protection of freshwater species. The potential exists for concentrations of PFOS to be above the adopted guideline, but below the laboratory LOR. This should be taken into consideration when interpreting and using this data quantitatively where results are reported below LOR.
Field QAQC RPDs	RPDs for groundwater surface water and sediment samples are reported in Tables C1, C2 and C3 respectively. Field duplicate and triplicate RPDs were reported within control limits for all groundwater, surface water and sediment samples except the following (the sample with the higher concentration is in bold). • **0861_MW034_210419** and 0861_QC147_210419 for PFOS (193%) • **0861_MW034_210419** and 0861_QC247_210419 for PFOS (187%) • **0861_MW047_210420** and 0861_QC148_210420 for PFBS (103%) • **0861_MW047_210420** and 0861_QC148_210420 for PFHxA (143%) • **0861_MW047_210420** and 0861_QC148_210420 for PFPeS (130%) • **0861_MW047_210420** and 0861_QC148_210420 for PFPeA (145%) • **0861_MW047_210420** and 0861_QC148_210420 for PFOS (139%) • **0861_MW047_210420** and 0861_QC248_210420 for PFOS (31%) • **0861_MW047_210420** and 0861_QC248_210420 for PFHxS (139%) • **0861_MW032_210421** and 0861_QC249_210421 for PFHpS (51%) • **0861_MW032_210421** and 0861_QC249_210421 for PFHpA (39%) • **0861_MW032_210421** and 0861_QC249_210421 for PFHxA (55%) • **0861_MW032_210421** and 0861_QC249_210421 for PFPeS (35%) • **0861_MW032_210421** and 0861_QC249_210421 for PFOS (56%) • **0861_MW032_210421** and 0861_QC249_210421 for PFHxS (38%) • **0861_SW037_210330** and 0861_QC239_210330 for PFOS (108%) • **0861_SW037_210330** and 0861_QC239_210330 for PFOA (32%) • **0861_SW037_210330** and 0861_QC239_210330 for PFHxS (51%) • **0861_SW079_210419** and 0861_QC245_210419 for PFHpS (70%) • **0861_SW079_210419** and 0861_QC245_210419 for PFHpA (38%) • **0861_SW079_210419** and 0861_QC245_210419 for PFHxA (48%) • **0861_SW079_210419** and 0861_QC245_210419 for PFPeS (74%) • **0861_SW079_210419** and 0861_QC245_210419 for PFPeA (37%) • **0861_SW079_210419** and 0861_QC245_210419 for PFOS (68%) • **0861_SW079_210419** and 0861_QC245_210419 for PFOA (39%) • **0861_SW079_210419** and 0861_QC245_210419 for PFHxS (31%) • 0861_SD037_210330 and **0861_QC240_210330** for PFDoDA (86%) • 0861_SD030_210330 and **0861_QC138_210330** for PFDoDA (55%) • 0861_SD030_210330 and **0861_QC238_210330** for PFDoDA (88%) • 0861_SD030_210330 and **0861_QC238_210330** for PFHxS (37%) • 0861_SD079_210419 and **0861_QC146_210419** for PFBS (64%) • 0861_SD079_210419 and **0861_QC146_210419** for PFDS (133%) • 0861_SD079_210419 and **0861_QC146_210419** for PFDoDA (90%) • 0861_SD079_210419 and **0861_QC146_210419** for PFHpS (117%) • 0861_SD079_210419 and **0861_QC146_210419** for PFHxA (65%) • 0861_SD079_210419 and **0861_QC146_210419** for PFUnDA (67%) • 0861_SD079_210419 and **0861_QC146_210419** for PFOS (91%) • 0861_SD079_210419 and **0861_QC146_210419** for PFOA (97%) • 0861_SD079_210419 and **0861_QC146_210419** for PFHxS (98%) • **0861_SD079_210419** and 0861_QC246_210419 for PFHxA (72%) • **0861_SD048_210412** and 0861_QC140_210412 for PFHpS (103%) • 0861_SD048_210412 and **0861_QC140_210412** for PFTrDA (59%) • **0861_SD048_210412** and 0861_QC140_210412 for PFOS (135%) • **0861_SD048_210412** and 0861_QC140_210412 for PFHxS (43%) • **0861_SD048_210412** and 0861_QC240_210412 for PFDS (125%)

- **0861_SD048_210412** and 0861_QC240_210412 for PFHpS (95%)
- **0861_SD048_210412** and 0861_QC240_210412 for PFOS (157%)
- **0861_SD048_210412** and 0861_QC240_210412 for PFHxS (90%)
- 0861_SD036_210414 and **0861_QC143_210414** for PFDS (177%)
- 0861_SD036_210414 and **0861_QC143_210414** for PFOS (41%)

The majority of the higher RPDs for groundwater, surface water and sediment are for the triplicate samples. The RPD results are not considered to impact the interpretation for this investigation but do demonstrate that there are differences in laboratory analysis and extraction methods in groundwater, surface water and sediment samples. Many of the RPDs are related to low detected concentrations or near the limit of reporting. It is noted that the QC samples results were within the same order of magnitude as the primary sample.

The elevated RPDs for the sediment samples is also attributed to sample heterogeneity.

All remaining samples reported within the control limits.

Other	
Other observations	None.

Table C1 Groundwater Duplicate and Triplicate Analytical Results

	Field ID	0861_MW034_210419	0861_QC147_210419		0861_QC247_210419		0861_MW047_210420	0861_QC148_210420		0861_QC248_210420		0861_MW032_210421	0861_QC149_210421		0861_QC249_210421		0861_MW042_210415	0861_QC144_210415		0861_QC244_210415	
	Sampled Date	19/04/2021	19/04/2021	RPD	19/04/2021	RPD	20/04/2021	20/04/2021	RPD	20/04/2021	RPD	21/04/2021	21/04/2021	RPD	21/04/2021	RPD	15/04/2021	15/04/2021	RPD	15/04/2021	RPD
	Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Analyte	**Units**	**EQL**																			
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	0.08	0.09	12	0.062	25	<0.05	<0.05	NC	<0.01	NC
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
EtFOSE	µg/L	0.05	<0.05	<0.05	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
MeFOSE	µg/L	0.05	<0.05	<0.05	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC
PFBS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.03	NC	<0.01	NC	**0.22**	**0.07**	**103**	0.21	5	1.72	1.82	6	1.6	7	<0.02	<0.02	NC	<0.01	NC
PFBA	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	NC	<0.05	NC	0.2	<0.1	67	0.19	5	0.5	0.6	18	0.58	15	<0.1	<0.1	NC	<0.05	NC
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	0.03	<0.02	40	<0.01	**100**	<0.02	<0.02	NC	<0.01	NC
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFHpS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	**0.08**	<0.02	**120**	0.05	46	0.93	0.98	5	**0.55**	**51**	<0.02	<0.02	NC	<0.01	NC
PFHpA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	0.01	67	1.04	1.08	4	**0.7**	**39**	<0.02	<0.02	NC	<0.01	NC
PFHxA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	**0.24**	**0.04**	**143**	0.16	40	3.88	3.4	13	**2.2**	**55**	<0.02	<0.02	NC	<0.01	NC
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	0.07	0.06	15	0.048	37	<0.02	<0.02	NC	<0.01	NC
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFPeS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	**0.19**	**0.04**	**130**	0.1	62	1.85	1.79	3	**1.3**	**35**	<0.02	<0.02	NC	<0.01	NC
PFPeA	µg/L	0.02	<0.02	<0.02	NC	<0.02	NC	**0.19**	**0.03**	**145**	0.14	30	0.8	0.83	4	0.6	29	<0.02	<0.02	NC	<0.02	NC
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC
PFTrDA	µg/L	0.02	<0.02	<0.02	NC	<0.02	NC	<0.02	<0.02	NC	<0.02	NC	<0.02	<0.02	NC	<0.02	NC	<0.02	<0.02	NC	<0.02	NC
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFOS	µg/L	0.01 : 0.02 (Interlab)	**0.59**	<0.01	**193**	<0.02	**187**	**2.46**	**0.44**	**139**	**1.8**	**31**	23.2	22.8	2	**13**	**56**	<0.01	<0.01	NC	<0.02	NC
PFOA	µg/L	0.01	<0.01	<0.01	NC	<0.01	NC	**0.04**	<0.01	120	0.025	46	2.13	2.2	3	1.6	28	<0.01	<0.01	NC	<0.01	NC
PFHxS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	0.18	0.2	11	**1**	**139**	8.64	8.5	2	**5.9**	**38**	<0.02	<0.02	NC	<0.01	NC

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: no limit (<10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

NC is not calculable

Table C2 Surface Water Duplicate and Triplicate Analytical Results

		Field ID	0861_SW038_210330	0861_QC137_210330		0861_QC237_210330		0861_SW037_210330	0861_QC139_210330		0861_QC239_210330		0861_SW016_210412	0861_QC141_210412		0861_QC241_210412		0861_SW036_210414	0861_QC142_210414		0861_QC242_210414	
		Sampled Date	30/03/2021	30/03/2021	RPD	30/03/2021	RPD	30/03/2021	30/03/2021	RPD	30/03/2021	RPD	12/04/2021	12/04/2021	RPD	12/04/2021	RPD	14/04/2021	14/04/2021	RPD	14/04/2021	RPD
		Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Analyte	**Units**	**EQL**																				
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.1	<0.1	NC	<0.01	NC	<0.05	<0.05	NC		0	<0.05	<0.05	NC	<0.01	NC
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.1	<0.1	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.1	<0.1	NC	0.043	80	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.1	<0.1	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	NC	<0.25	<0.25	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.1	<0.1	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
EtFOSE	µg/L	0.05	<0.05	<0.05	NC	<0.05	NC	<0.25	<0.25	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	NC	<0.25	<0.25	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.1	<0.1	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
MeFOSE	µg/L	0.05	<0.05	<0.05	NC	<0.05	NC	<0.25	<0.25	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC
PFBS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	0.93	0.96	NC	0.83	11	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFBA	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	NC	<0.05	NC	<0.5	<0.5	NC	0.47	6	<0.1	<0.1	NC	<0.05	NC	<0.1	<0.1	NC	<0.05	NC
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.1	<0.1	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.1	<0.1	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.1	<0.1	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFHpS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	0.2	0.2	0	0.09	76	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFHpA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	0.42	0.39	7	0.36	15	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFHxA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	0.01	67	2	2.03	1	1.7	16	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.1	<0.1	NC	0.018	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.1	<0.1	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFPeS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	0.83	0.89	7	0.66	23	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFPeA	µg/L	0.02	<0.02	<0.02	NC	<0.02	NC	1.36	1.32	3	1.1	21	<0.02	<0.02	NC	<0.02	NC	<0.02	<0.02	NC	<0.02	NC
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	NC	<0.25	<0.25	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC
PFTrDA	µg/L	0.02	<0.02	<0.02	NC	<0.02	NC	<0.1	<0.1	NC	<0.02	NC	<0.02	<0.02	NC	<0.02	NC	<0.02	<0.02	NC	<0.02	NC
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.1	<0.1	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFOS	µg/L	0.01 : 0.02 (Interlab)	<0.01	0.01	0	<0.02	NC	4.34	3.56	20	**1.3**	**108**	0.04	0.03	29	<0.02	NC	0.01	0.02	67	<0.02	NC
PFOA	µg/L	0.01	<0.01	<0.01	NC	<0.01	NC	0.58	0.56	4	**0.42**	**32**	<0.01	<0.01	NC	<0.01	NC	<0.01	<0.01	NC	<0.01	NC
PFHxS	µg/L	0.02 : 0.01 (Interlab)	<0.02	0.03	40	0.019	5	5.23	4.96	5	**3.1**	**51**	0.02	0.02	0	0.017	16	<0.02	<0.02	NC	<0.01	NC

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: no limit (<10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Table C2 Surface Water Duplicate and Triplicate Analytical Results

		Field ID	0861_SW079_210419	0861_QC145_210419		0861_QC245_210419		0861_SW025_210421	0861_QC151_210421		0861_QC251_210421	
		Sampled Date	19/04/2021	19/04/2021	RPD	19/04/2021	RPD	21/04/2021	21/04/2021	RPD	21/04/2021	RPD
		Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Analyte	**Units**	**EQL**										
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	0.04	22	<0.05	<0.05	NC	<0.01	NC
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	NC	<0.01	NC	<0.05	<0.05	NC	<0.01	NC
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
EtFOSE	µg/L	0.05	<0.05	<0.05	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
MeFOSE	µg/L	0.05	<0.05	<0.05	NC	<0.05	NC	<0.05	<0.05	NC	<0.05	NC
PFBS	µg/L	0.02 : 0.01 (Interlab)	1.9	1.81	5	1.7	11	<0.02	<0.02	NC	<0.01	NC
PFBA	µg/L	0.1 : 0.05 (Interlab)	0.4	0.4	NC	0.42	5	<0.1	<0.1	NC	<0.05	NC
PFDS	µg/L	0.02 : 0.01 (Interlab)	**0.1**	<0.02	**133**	<0.01	**164**	<0.02	<0.02	NC	<0.01	NC
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFHpS	µg/L	0.02 : 0.01 (Interlab)	1.02	0.76	29	**0.49**	**70**	<0.02	<0.02	NC	<0.01	NC
PFHpA	µg/L	0.02 : 0.01 (Interlab)	0.6	0.54	11	**0.41**	**38**	<0.02	<0.02	NC	<0.01	NC
PFHxA	µg/L	0.02 : 0.01 (Interlab)	3.59	3.24	10	**2.2**	**48**	<0.02	<0.02	NC	<0.01	NC
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
FOSA	µg/L	0.02 : 0.01 (Interlab)	0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFPeS	µg/L	0.02 : 0.01 (Interlab)	3.26	2.68	20	**1.5**	**74**	<0.02	<0.02	NC	<0.01	NC
PFPeA	µg/L	0.02	1.06	0.93	13	**0.73**	**37**	<0.02	<0.02	NC	<0.02	NC
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	NC	<0.02	NC	<0.05	<0.05	NC	<0.02	NC
PFTrDA	µg/L	0.02	<0.02	<0.02	NC	<0.02	NC	<0.02	<0.02	NC	<0.02	NC
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	NC	<0.01	NC	<0.02	<0.02	NC	<0.01	NC
PFOS	µg/L	0.01 : 0.02 (Interlab)	12.8	10.1	24	**6.3**	**68**	<0.01	<0.01	NC	<0.02	NC
PFOA	µg/L	0.01	0.89	0.85	5	**0.6**	**39**	<0.01	<0.01	NC	<0.01	NC
PFHxS	µg/L	0.02 : 0.01 (Interlab)	13.7	13.2	4	**10**	**31**	<0.02	<0.02	NC	<0.01	NC

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: no limit (<10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary
NC is not calculable

Table C3 Sediment Duplicate and Triplicate Analytical Results

		Field ID	0861_SD037_210330	0861_QC140_210330		0861_QC240_210330		0861_SD030_210330	0861_QC138_210330		0861_QC238_210330		0861_SD079_210419	0861_QC146_210419		0861_QC246_210419	
		Sampled Date	30/03/2021	30/03/2021	RPD	30/03/2021	RPD	30/03/2021	30/03/2021	RPD	30/03/2021	RPD	19/04/2021	19/04/2021	RPD	19/04/2021	RPD
			Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Analyte	**Units**	**EQL**															
10:2 FTS	mg/kg	0.0005 : 0.002 (Interlab)	0.0006	<0.0005	18	<0.002	NC	<0.0026	0.001	NC	<0.002	NC	<0.001	<0.001	NC	<0.002	NC
4:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	NC	<0.001	NC	<0.0026	<0.0005	NC	<0.001	NC	<0.001	<0.001	NC	<0.001	NC
6:2 FtS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	NC	<0.001	NC	<0.0026	0.0013	NC	0.0028	7	<0.001	<0.001	NC	<0.001	NC
8:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	NC	**0.0021**	**123**	<0.0026	0.0012	NC	0.0024	NC	<0.001	<0.001	NC	<0.001	NC
EtFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0012	<0.0005	NC	<0.002	NC	<0.0064	<0.0012	NC	<0.002	NC	<0.0025	<0.0025	NC	<0.002	NC
EtFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0005	<0.0002	NC	<0.002	NC	<0.0026	<0.0005	NC	<0.002	NC	<0.001	<0.001	NC	<0.002	NC
EtFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0012	<0.0005	NC	<0.005	NC	<0.0064	<0.0012	NC	<0.005	NC	<0.0025	<0.0025	NC	<0.005	NC
MeFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0012	<0.0005	NC	<0.002	NC	<0.0064	<0.0012	NC	<0.002	NC	<0.0025	<0.0025	NC	<0.002	NC
MFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0005	<0.0002	NC	<0.002	NC	<0.0026	<0.0005	NC	<0.002	NC	<0.001	<0.001	NC	<0.002	NC
MeFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0012	<0.0005	NC	<0.005	NC	<0.0064	<0.0012	NC	<0.005	NC	<0.0025	<0.0025	NC	<0.005	NC
PFBS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0005	0.0004	22	<0.001	NC	<0.0026	<0.0005	NC	0.0011	NC	**0.0016**	**0.0031**	**64**	0.001	46
PFBA	mg/kg	0.001	<0.002	0.001	66	<0.002	NC	<0.013	0.003	NC	0.003	NC	<0.005	<0.005	NC	<0.002	NC
PFDS	mg/kg	0.0002	0.0009	0.001	11	0.0016	56	<0.0026	<0.0005	NC	<0.001	NC	**0.0017**	**0.0084**	**133**	<0.001	NC
PFDA	mg/kg	0.0002 : 0.001 (Interlab)	0.0024	0.0015	46	0.0037	43	<0.0026	0.0038	NC	**0.0049**	61	<0.001	0.0011	10	<0.001	NC
PFDoDA	mg/kg	0.0002 : 0.002 (Interlab)	0.001	0.0012	18	**0.0025**	**86**	**0.0043**	**0.0076**	**55**	**0.011**	**88**	**0.0016**	**0.0042**	**90**	<0.002	NC
PFHpS	mg/kg	0.0002 : 0.001 (Interlab)	0.0006	0.0005	18	<0.001	NC	<0.0026	0.0009	NC	<0.001	NC	**0.003**	**0.0114**	**117**	0.0031	3
PFHpA	mg/kg	0.0002 : 0.001 (Interlab)	0.0012	0.0011	9	<0.001	NC	<0.0026	0.0021	NC	0.0016	NC	<0.001	<0.0012	NC	<0.001	NC
PFHxA	mg/kg	0.0002 : 0.001 (Interlab)	0.0023	0.0023	0	0.0018	24	0.0033	0.0039	17	0.0042	24	**0.0032**	**0.0063**	**65**	**0.0015**	**72**
PFNA	mg/kg	0.0002 : 0.001 (Interlab)	0.0008	0.0006	29	0.001	22	<0.0026	0.0033	NC	0.0031	18	<0.001	<0.001	NC	<0.001	NC
FOSA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0005	<0.0002	NC	<0.001	NC	<0.0026	<0.0005	NC	<0.001	NC	<0.001	<0.0014	NC	<0.001	NC
PFPeS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0005	0.0004	22	<0.001	NC	<0.0026	<0.0005	NC	<0.001	NC	0.0023	0.0038	49	0.0014	49
PFPeA	mg/kg	0.0002 : 0.002 (Interlab)	0.004	0.0036	11	0.003	29	0.0057	0.0061	7	0.0054	5	0.0014	0.0018	25	<0.002	NC
PFTeDA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0012	<0.0005	NC	<0.002	NC	<0.0064	0.0016	NC	0.0028	NC	<0.0025	<0.0025	NC	<0.002	NC
PFTrDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0005	0.0002	NC	<0.002	NC	<0.0026	0.0022	NC	0.0032	21	<0.001	<0.001	NC	<0.002	NC
PFUnDA	mg/kg	0.0002 : 0.002 (Interlab)	0.0014	0.0012	15	0.003	73	**0.0038**	**0.0065**	**52**	0.0062	48	**0.0012**	**0.0024**	**67**	<0.002	NC
PFOS	mg/kg	0.0002 : 0.002 (Interlab)	0.0913	0.0776	16	0.1	9	0.106	0.134	23	0.13	20	**0.23**	**0.611**	**91**	0.2	14
PFOA	mg/kg	0.0002 : 0.001 (Interlab)	0.0011	0.0012	9	0.0015	31	<0.0026	0.0023	NC	0.0025	NC	**0.0016**	**0.0046**	**97**	0.0018	12
PFHxS	mg/kg	0.0002 : 0.001 (Interlab)	0.0043	0.0046	7	0.0044	2	0.0076	0.009	17	**0.011**	**37**	**0.0237**	**0.0688**	**98**	0.021	12

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: no limit (<10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory
NC is not calculable

Table C3 Sediment Duplicate and Triplicate Analytical Results

		Field ID	0861_SD025_210421	0861_QC150_210421		0861_QC250_210421		0861_SD048_210412	0861_QC140_210412		0861_QC240_210412		0861_SD036_210414	0861_QC143_210414		0861_QC243_210414	
		Sampled Date	21/04/2021	21/04/2021	RPD	21/04/2021	RPD	12/04/2021	12/04/2021	RPD	12/04/2021	RPD	14/04/2021	14/04/2021	RPD	14/04/2021	RPD
			Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Analyte	**Units**	**EQL**															
10:2 FTS	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	NC	<0.002	NC	0.0008	0.0006	29	<0.002	NC	<0.0005	<0.0005	NC	<0.002	NC
4:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	NC	<0.001	NC	<0.0005	<0.0005	NC	<0.001	NC	<0.0005	<0.0005	NC	<0.001	NC
6:2 FtS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	NC	<0.001	NC	0.0024	0.0042	55	0.0023	4	<0.0005	<0.0005	NC	<0.001	NC
8:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	NC	<0.001	NC	**0.0023**	**0.0009**	88	0.0016	36	<0.0005	<0.0005	NC	<0.001	NC
EtFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	NC	<0.002	NC	<0.0012	<0.0012	NC	<0.002	NC	<0.0012	<0.0012	NC	<0.002	NC
EtFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	NC	<0.002	NC	<0.0005	<0.0005	NC	<0.002	NC	<0.0005	<0.0005	NC	<0.002	NC
EtFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	NC	<0.005	NC	<0.0012	<0.0012	NC	<0.005	NC	<0.0012	<0.0012	NC	<0.005	NC
MeFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	NC	<0.002	NC	<0.0012	<0.0012	NC	<0.002	NC	<0.0012	<0.0012	NC	<0.002	NC
MFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	NC	<0.002	NC	<0.0005	<0.0005	NC	<0.002	NC	<0.0005	<0.0005	NC	<0.002	NC
MeFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	NC	<0.005	NC	<0.0012	<0.0012	NC	<0.005	NC	<0.0012	<0.0012	NC	<0.005	NC
PFBS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	NC	<0.001	NC	<0.0005	0.0007	33	<0.001	NC	<0.0005	<0.0005	NC	<0.001	NC
PFBA	mg/kg	0.001	<0.001	<0.001	NC	<0.002	NC	<0.002	<0.002	NC	<0.002	NC	<0.002	<0.002	NC	<0.002	NC
PFDS	mg/kg	0.0002	<0.0002	<0.0002	NC	<0.001	NC	0.0065	0.0049	28	**0.0015**	**125**	<0.0038	0.0644	**177**	<0.001	NC
PFDA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	NC	<0.001	NC	<0.0005	<0.0005	NC	<0.001	NC	<0.0005	<0.0005	NC	<0.001	NC
PFDoDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	NC	<0.002	NC	0.0007	0.0014	67	<0.002	NC	<0.0005	<0.0008	NC	<0.002	NC
PFHpS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	NC	<0.001	NC	**0.0028**	**0.0009**	**103**	<0.001	**95**	<0.0005	<0.0005	NC	<0.001	NC
PFHpA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	NC	<0.001	NC	<0.0005	0.0006	18	<0.001	NC	<0.0005	<0.0005	NC	<0.001	NC
PFHxA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	NC	<0.001	NC	0.0009	0.0017	62	<0.001	NC	<0.0005	<0.0005	NC	<0.001	NC
PFNA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	NC	<0.001	NC	<0.0005	<0.0005	NC	<0.001	NC	<0.0005	<0.0005	NC	<0.001	NC
FOSA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	NC	<0.001	NC	0.002	0.0026	26	0.0018	11	<0.0005	<0.0005	NC	<0.001	NC
PFPeS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	NC	<0.001	NC	<0.0005	0.001	67	<0.001	NC	<0.0005	<0.0005	NC	<0.001	NC
PFPeA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	NC	<0.002	NC	<0.0005	<0.0005	NC	<0.002	NC	<0.0005	<0.0006	NC	<0.002	NC
PFTeDA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	NC	<0.002	NC	0.0013	0.0022	51	<0.002	NC	<0.0012	<0.0012	NC	<0.002	NC
PFTrDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	NC	<0.002	NC	**0.0012**	**0.0022**	**59**	<0.002	NC	<0.0005	<0.0005	NC	<0.002	NC
PFUnDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	NC	<0.002	NC	0.0006	<0.0005	18	<0.002	NC	<0.0005	<0.0005	NC	<0.002	NC
PFOS	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	NC	<0.002	NC	**0.65**	**0.127**	**135**	**0.079**	**157**	**0.0046**	**0.007**	**41**	0.0059	25
PFOA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	NC	<0.001	NC	0.0007	0.0011	44	<0.001	NC	<0.0005	<0.0005	NC	<0.001	NC
PFHxS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	NC	<0.001	NC	**0.0124**	**0.008**	**43**	**0.0047**	**90**	<0.0005	<0.0005	NC	<0.001	NC

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: no limit (<10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory
NC is not calculable

Table C4 Field Blank and Rinsate Blank Analytical Results

	Field ID	0861_QC433_210330	0861_QC438_210416	0861_QC439_210419	0861_QC440_210420	0861_QC441_210421	0861_QC434_210412	0861_QC435_210413	0861_QC436_210414	0861_QC437_210415	0861_QC334_210416	0861_QC335_210419	0861_QC336_210420	0861_QC337_210421	0861_QC330_210412	0861_QC331_210413	0861_QC332_210414	0861_QC333_210415
	Sampled Date	30/03/2021	16/04/2021	19/04/2021	20/04/2021	21/04/2021	12/04/2021	13/04/2021	14/04/2021	15/04/2021	16/04/2021	19/04/2021	20/04/2021	21/04/2021	12/04/2021	13/04/2021	14/04/2021	15/04/2021
	Sample Type	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate
Analyte	Units	EQL																	
10:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 FtS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EtFOSA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EtFOSAA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
EtFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MeFOSA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MFOSAA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MeFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PFBS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFBA	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
PFDS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFDoDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHpS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHpA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHxA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFNA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
FOSA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFPeS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFPeA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFTeDA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PFTrDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFUnDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFOA	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFHxS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Table C5 Trip Blank Analytical Results

	Field ID	0861_QC510_210330	0861_QC511_210412	0861_Q151_210421	0861_QC512_210419	0861_QC509_210330	0861_QC513_210419	0861_QC514_210419
	Sampled Date	30/03/2021	12/04/2021	21/04/2021	19/04/2021	30/03/2021	14/04/2021	14/04/2021
	Sample Type	Trip Blank (water)	Trip Blank (water)	Trip Blank (water)	Trip Blank (water)	Trip Blank (soil)	Trip Blank (soil)	Trip Blank (soil)
Analyte	**Units**	**EQL**						
10:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	-	-	-
4:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	-	-	-
6:2 FtS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	-	-	-
8:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	-	-	-
EtFOSA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	-	-	-
EtFOSAA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-
EtFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	-	-	-
MeFOSA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	-	-	-
MFOSAA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-
MeFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	-	-	-
PFBS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-
PFBA	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	-	-	-
PFDS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-
PFDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-
PFDoDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-
PFHpS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-
PFHpA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-
PFHxA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-
PFNA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-
FOSA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-
PFPeS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-
PFPeA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-
PFTeDA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	-	-	-
PFTrDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-
PFUnDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-
PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	-	-	-
PFOA	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	-	-	-
PFHxS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-
10:2 FTS	mg/kg	0.0005	-	-	-	-	<0.0005	<0.0005	<0.0005
4:2 FTS	mg/kg	0.0005	-	-	-	-	<0.0005	<0.0005	<0.0005
6:2 FtS	mg/kg	0.0005	-	-	-	-	<0.0005	<0.0005	<0.0005
8:2 FTS	mg/kg	0.0005	-	-	-	-	<0.0005	<0.0005	<0.0005
EtFOSA	mg/kg	0.0005	-	-	-	-	<0.0005	<0.0005	<0.0005
EtFOSAA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002
EtFOSE	mg/kg	0.0005	-	-	-	-	<0.0005	<0.0005	<0.0005
MeFOSA	mg/kg	0.0005	-	-	-	-	<0.0005	<0.0005	<0.0005
MFOSAA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002
MeFOSE	mg/kg	0.0005	-	-	-	-	<0.0005	<0.0005	<0.0005
PFBS	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002
PFBA	mg/kg	0.001	-	-	-	-	<0.001	<0.001	<0.001
PFDS	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002
PFDA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002
PFDoDA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002
PFHpS	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002
PFHpA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002
PFHxA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002
PFNA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002
FOSA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002
PFPeS	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002
PFPeA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002
PFTeDA	mg/kg	0.0005	-	-	-	-	<0.0005	<0.0005	<0.0005
PFTrDA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002
PFUnDA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002
PFOS	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002
PFOA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002
PFHxS	mg/kg	0.0002	-	-	-	-	<0.0002	<0.0002	<0.0002

Appendix D

Chain of Custody Forms

Appendix D Chain of Custody Forms

12/4

AECOM — **Chain of Custody** — COC Page 1 of 3

AECOM Australia Pty Ltd Level 8, 540 Wickham Street Fortitude Valley, QLD, 4006 PO Box 1307 Fortitude Valley QLD 4006	**Email reports to:** [redacted]
Laboratory Details Lab. Name: Lab. Address: Contact Name: ALS Brisbane Lab. Ref:	Tel: Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no. :

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0861_SW021-210330	30/3		✓				✓		3x2P	✓		LD + MS
2	0861_QC510-210330	"		✓				✓		1x2P	✓		
3	0861_QC433-210330	"		✓				✓		"	✓		
4	0861_SW038-210330	"		✓				✓		"	✓		
5	0861_QC137-210330	"		✓				✓		"	✓		
6	0861_SW003-210330	"		✓				✓		"	✓		
7	0861_SW030-210330	"		✓				✓		"	✓		
8	0861_SW076-210330	"		✓				✓		2x2P	✓		LD
9	0861_SW011-210330	"		✓				✓		1x2P	✓		
10	0861_SW027-210330	"		✓				✓		"	✓		
11	0861_SW056-210330	"		✓				✓		"	✓		
12	0861_SW002-210330	"		✓				✓		"	✓		
13	0861_SW059-210330	"		✓				✓		"	✓		
14	0861_SW037-210330	"		✓				✓		"	✓		

Environmental Division Brisbane
Work Order Reference
EB2108857
[redacted]

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by: [redacted]	Signed: [redacted]	Date:		Relinquished by:	Signed:	Date:	
Received by: [redacted]	Signed:	Date: 31/3/21 1110		Received by:	Signed:	Date:	

AECOM

Chain of Custody

COC Page 2 of 3

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name: ALS Brisbane
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
15	0861_QC139-210330	30/3		✓				✓		14ZP	✓		
16	0861_SW039-210330	"		✓				✓		"	✓		
17	0861_SW061-210330	"		✓				✓		"	✓		
18	0861_SD061-210330	"			✓			✓		1P	✓		
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted]	Signed: [redacted]	Date:		Relinquished by:	Signed:	Date:	
Received by: [redacted]	Signed:	Date: 31/3/21 1110		Received by:	Signed:	Date:	

AECOM — **Chain of Custody** — COC Page 3 of 3

AECOM Australia Pty Ltd	**Laboratory Details**	Tel:
Level 8, 540 Wickham Street	Lab. Name:	Fax:
Fortitude Valley, QLD, 4006	Lab. Address:	Preliminary Report by:
PO Box 1307 Fortitude Valley QLD 4006	Contact Name: ALS Brisbane	Final Report by:
Email reports to: [redacted]	Lab. Ref:	Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no.

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request - **SEDIMENTS**

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
19	0861_SD021-210330	30/3			✓			✓		1x P	✓		
20	0861_QC509-210330	"			✓			✓		"	✓		
21	0861_SD038-210330	"			✓			✓		"	✓		
22	0861_SD003-210330	"			✓			✓		"	✓		
23	0861_SD030-210330	"			✓			✓		"	✓		
24	0861_SD076-210330	"			✓			✓		"	✓		
25	0861_SD011-210330	"			✓			✓		"	✓		
26	0861_SD027-210330	"			✓			✓		"	✓		
27	0861_SD056-210330	"			✓			✓		"	✓		
28	0861_SD002-210330	"			✓			✓		"	✓		
29	0861_SD059-210330	"			✓			✓		"	✓		
30	0861_SD037-210330	"			✓			✓		"	✓		
31	0861_QC140-210330	"			✓			✓		"	✓		
32	0861_SD039-210330	"			✓			✓		"	✓		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date:		Relinquished by:	Signed:	Date:	
Received by: [redacted]	Signed:	31/3/21	Date: 1110	Received by:	Signed:	Date:	

PRIVATE

04/05

AECOM — **Chain of Custody** — COC Page 1 of 1

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name: ALS BRISBANE
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. : [redacted]
Project Name: QLD_0861_PFASOMP
Quote : SY/139/19 VJ
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1 ✓	0861_MW054S_210421	21/4/21		✓						2	X		
2 ✓	0861_MW054D_210421	21/4/21		✓						2	X		
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Environmental Division Brisbane
Work Order Reference
EB2111111
[redacted]

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME
Temp. received: °C
Report & invoice: [redacted]
Lab Report No. / Esky ID

Relinquished by: [redacted] Signed: [redacted] Date: 22/4/21
Received by: [redacted] Signed: [redacted] Date: 22.4.21

Relinquished by: Signed: Date:
Received by: Signed: Date:

1.55

COUNCIL

04/05

AECOM — **Chain of Custody** — COC Page 1 of 2

AECOM Australia Pty Ltd Level 8, 540 Wickham Street Fortitude Valley, QLD, 4006 PO Box 1307 Fortitude Valley QLD 4006	**Email reports to:** [redacted]	**Laboratory Details** Lab. Name: ALS BRISBANE Lab. Address: Contact Name: Lab. Ref:
		Tel: Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no. : [redacted] Quote : SY/139/19 V3

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1 ✓	0861_SW093-210415	15/4/21		X						2	X		
	0861_												
	0861_												
2 ✓	0861_SW098-210415	15/4/21		X						2	X		
3 ✓	0861_MW056D_210415	15/4/21		X						2	X		
4 ✓	0861_MW056S_210415	15/4/21		X						2	X		
5 ✓	0861_MW057S_210421	21/4/21		X						2	X		
6 ✓	0861_SW026_210416	16/4/21		X						2	X		
7 ✓	0861_SW025_210421	21/4/21		X						2	X		
	0861												
	0861_												
8 ✓	0861_SW045_210415	15/4/21		X						2	X		
9 ✓	0861_MW057D_210421	21/4/21		X						2	X		
10 ✓	0861_SW040_210415	15/4/21		X						2	X		

Environmental Division Brisbane
Work Order Reference
EB2111112

Telephone : [redacted]

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by: [redacted]	Signed: [redacted]	Date: 22/4/21	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed: [redacted]	Date: 22.4.21	Received by:	Signed:	Date:

1-55

COUNCIL

AECOM

Chain of Custody

COC Page 2 of 2

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no.

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request - **SEDIMENTS**

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
11 ✓	0861_SD043_210415	15/4/21			X					1	X		
	0861_S												
	0861_												
12 ✓	0861_SD098_210415	15/4/21			X					1	X		
13 ✓	0861_SD026_210416	16/4/21			X					1	X		
14 ✓	0861_SD025_210421	21/4/21			X					1	X		
	0861_												
	0861_												
15 ✓	0861_SD045_210415	15/4/21			X					1	X		
16 ✓	0861_SD040_210415	15/4/21			X					1	X		
	0861_												
	0861_												
	0861_												
	0861_												

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by:	Signed:	Date:	Relinquished by: Signed: Date:
Received by: [redacted]	Signed: [redacted]	Date: 22.4.21	Received by: Signed: Date:

1.JT

SD

AECOM — **Chain of Custody** — COC Page 10 of 12

AECOM Australia Pty Ltd Level 8, 540 Wickham Street Fortitude Valley, QLD, 4006 PO Box 1307 Fortitude Valley QLD 4006	**Email reports to:** [redacted]	**Laboratory Details** Lab. Name: Lab. Address: Contact Name: Lab. Ref:
		Tel: Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no.

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request - **SEDIMENTS**

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)
1 ✓	0861_SD048_210412	12/4/21	X							1	X
2 ✓	0861_SD005_210412	12/4/21	X								X
3 ✓	0861_SD015_210412	12/4/21	X								X
4 ✓	0861_SD016_210412	12/4/21	X								X
5 ✓	0861_SD018_210412	12/4/21	X								X
6 ✓	0861_SD034_210412	12/4/21	X								X
7 ✓	0861_SD020_210412	12/4/21	X								X
8 ✓	0861_SD028_210412	12/4/21	X								X
9 ✓	0861_SD051_210413	13/4/21	X								X
10 ✓	0861_SD099_210413	13/4/21	X								X
11 ✓	0861_SD100_210413	13/4/21	X								X
	0861_										
12 ✓	0861_SD049_210413	13/4/21	X								X
13 ✓	0861_SD089_210413	13/4/21	X								X

Notes

Environmental Division
Brisbane
Work Order Reference
EB2111116

Telephone : [redacted]

SPLIT BATCH
Test ..... Assoc. Batch No.
EB2111116, EB2111121

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME	Temp. received: °C	Report & invoice: [redacted]	Lab Report No. / Esky ID
Relinquished by:	Signed:	Date:	Relinquished by: Signed: Date:
Received by: [redacted]	Signed: [redacted]	Date: 22.4.21	Received by: Signed: Date:

1.55

SD

AECOM — **Chain of Custody** — COC Page 11 of 12

AECOM Australia Pty Ltd Level 8, 540 Wickham Street Fortitude Valley, QLD, 4006 PO Box 1307 Fortitude Valley QLD 4006	**Email reports to:** [redacted]	**Laboratory Details** Lab. Name: Lab. Address: Contact Name: Lab. Ref:
		Tel: Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no.

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request - **SEDIMENTS**

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
14 ✓	0861_SD052_210413	13/4/21	x							1	x		
15 ✓	0861_SD088_210413	13/4/21	x							↓	x		
16 ✓	0861_SD091_210414	14/4/21	x								x		
17 ✓	0861_SD090-210414	14/4/21	x								x		
18 ✓	0861_SD047-210414	14/4/21	x								x		
19 ✓	0861_SD050-210414	14/4/21	x								x		
20 ✓	0861_SD036-210414	14/4/21	x								x		
21 ✓	0861_SD094-210414	14/4/21	x								x		
22 ✓	0861_SD009-210414	14/4/21	x								x		
23 ✓	0861_SD004+210414	14/4/21	x								x		
	0861_												
	~~0861_~~												
24 ✓	0861_SD008-210415	15/4/21	x								x		
25 ✓	0861_SD033-210415	15/4/21	x							✓	x		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by:		Signed:	Date:	Relinquished by:	Signed: Date:
Received by: [redacted]		Signed: [redacted]	Date: 22.4.21	Received by:	Signed: Date:

1 of 5

SD

AECOM — **Chain of Custody** — COC Page 12 of 12

AECOM Australia Pty Ltd	**Laboratory Details**	Tel:
Level 8, 540 Wickham Street	Lab. Name:	Fax:
Fortitude Valley, QLD, 4006	Lab. Address:	Preliminary Report by:
PO Box 1307 Fortitude Valley QLD 4006	Contact Name:	Final Report by:
Email reports to: [redacted]	Lab. Ref:	Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no.

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request - **SEDIMENTS**

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
	0861_									1			
26 ✓	0861_SD064-210419	19/4/21	x								x		
27 ✓	0861_SD067-210419	19/4/21	x								x		
28 ✓	0861_SD079-210419	19/4/21	x								x		
29 ✓	0861_SD080-210419	19/4/21	x								x		
30 ✓	0861_SD053-210419	19/4/21	x								x		
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Comments: **Please send Esdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. Esky ID

Relinquished by:	Signed:	Date:	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed: [redacted]	Date: 22.4.21	Received by:	Signed:	Date:

1.55

SW 04/05

AECOM — **Chain of Custody** — COC Page 1 of 12

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name: ALS BRISBANE
Lab. Address:
Contact Name: #825
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: R. Burke
Mobile no. : 0490494804
Project Name: QLD_0861_PFASOMP
Quote SY/139/19 V3
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD
1 ✓	0861_SW005-210412	12/4/21		X						2	X	
2 ✓	0861_SW015-210412	12/4/21		X						2	X	
3 ✓	0861_SW016-210412	12/4/21		X						2	X	
4 ✓	0861_SW018-210412	12/4/21		X						2	X	
5 ✓	0861_SW020-210412	12/4/21		X						2	X	
6 ✓	0861_SW034-210412	12/4/21		X						2	X	
7 ✓	0861_SW028-210412	12/4/21		X						2	X	
8 ✓	0861_SW051-210413	13/4/21		X						2	X	
9 ✓	0861_SW099-210413	13/4/21		X						2	X	
10 ✓	0861_SW100-210413	13/4/21		X						2	X	
	0861_			X								
11 ✓	0861_SW049-210413	13/4/21		X						2	X	
12 ✓	0861_SW089-210413	13/4/21		X						2	X	
13 ✓	0861_SW052-210413	13/4/21		X						2	X	

Notes

Environmental Division
Brisbane
Work Order Reference
EB2111121 JH

Telephone : [redacted]

SPLIT BATCH
Test
Assoc. Batch No.
EB2111116, EB2111121

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

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Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted] Signed: [redacted] Date: 22/4/21
Received by: [redacted] Signed: [redacted] Date: 22.4.21

Relinquished by: Signed: Date:
Received by: Signed: Date:

1.5

SW

AECOM — **Chain of Custody** — COC Page 2 of 12

AECOM Australia Pty Ltd	**Laboratory Details**	Tel:
Level 8, 540 Wickham Street	Lab. Name:	Fax:
Fortitude Valley, QLD, 4006	Lab. Address:	Preliminary Report by:
PO Box 1307 Fortitude Valley QLD 4006	Contact Name:	Final Report by:
Email reports to: [redacted]	Lab. Ref:	Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no. :

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
14 ✓	0861_ SW008-210413	13/4/21		x						2	x		
15 ✓	0861_ SW090-210414	14/4/21		x						↓	x		
16 ✓	0861_ SW091-210414	14/4/21		x							x		
17 ✓	0861_ SW047-210414	14/4/21		x							x		
18 ✓	0861_ SW050-210414	14/4/21		x							x		
19 ✓	0861_ SW036-210414	14/4/21		x							x		
20 ✓	0861_ SW094-210414	14/4/21		x							x		
21 ✓	0861_ SW009-210414	14/4/21		x							x		
22 ✓	0861_ SW004-210414	14/4/21		x							x		
	0861_												
	0861_												
23 ✓	0861_ SW008_210415	15/4/21		x							x		
24 ✓	0861_ SW033-210415	15/4/21		x						↓	x		
	0861_												

Comments: **Please send Esdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME** Temp. received: °C **Report & invoice:** [redacted] Lab Report No: Esky ID:

Relinquished by:	Signed:	Date:	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed: [redacted]	Date: 22.4.21	Received by:	Signed:	Date:

SW

AECOM — **Chain of Custody** — COC Page 3 of 12

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
25 ✓	0861_SW064_210419	19/4/21		X						2	X		
26 ✓	0861_SW067_210419	19/4/21		X						↓	X		
27 ✓	0861_SW079_210419	19/4/21		X							X		
28 ✓	0861_SW080_210419	19/4/21		X							X		
29 ✓	0861_SW053_210419	19/4/21		X						↓	X		
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**
Temp. received: °C
Report & invoice: [redacted]
Lab Report No | Esky ID

Relinquished by: Signed: Date:
Received by: [redacted] Signed: [redacted] Date: 22.4.21

Relinquished by: Signed: Date:
Received by: Signed: Date:

1 of 1

MW

AECOM — Chain of Custody — COC Page 4 of 12

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
30 ✓	0861_MW030-210413	13-04-21		x						2	x		
31 ✓	0861_MW031-210413	13-04-21		x							x		
32 ✓	0861_MW002-210413	13-04-21		x							x		
33 ✓	0861_MW042-210415	15-04-21		x							x		
34 ✓	0861_MW043-210415	15/4/21		x							x		
	0861_												
	0861_												
35 ✓	0861_MW048-210416	16/4/21		x							x		
36 ✓	0861_MW022-210416	16/4/21		x							x		
37 ✓	0861_MW055S-210416	16/4/21		x							x		
38 ✓	0861_MW055D-210416	16/4/21		x							x		
39 ✓	0861_MW035-210416	16/4/21		x							x		
40 ✓	0861_MW036-210416	16/4/21		x							x		
41 ✓	0861_MW028-210416	16/4/21		x						↓	x		

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Report & invoice: [redacted]
Lab Report No | Esky ID

Relinquished by:	Signed:	Date:	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed: [redacted]	Date: 22.4.21	Received by:	Signed:	Date:

1.55

MW

AECOM

Chain of Custody

COC Page 5 of 12

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
42 ✓	0861_MW029-210416	16/4/21		x						2	x		
43 ✓	0861_MW025-210416	16/4/21		x							x		
44 ✓	0861_MW007-210419	19/4/21		x							x		
45 ✓	0861_MW034-210419	19/4/21		x							x		
46 ✓	0861_MW021-210419	19/4/21		x							x		
47 ✓	0861_MW024-210420	20/4/21		x							x		
48 ✓	0861_MW033-210420	20/4/21		x							x		
49 ✓	0861_MW309-210420	20/4/21		x							x		
50 ✓	0861_MW012-210420	20/4/21		x							x		
51 ✓	0861_MW020-210420	20/4/21		x							x		
52 ✓	0861_MW037-210420	20/4/21		x							x		
53 ✓	0861_MW067-210420	20/4/21		x							x		
	0861_												
	0861_												

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Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by:		Signed:	Date:	Relinquished by:	Signed:	Date:
Received by: [redacted]		Signed: [redacted]	Date: 22.4.21	Received by:	Signed:	Date:

1.55

MW

AECOM — **Chain of Custody** — COC Page 6 of 12

AECOM Australia Pty Ltd	**Laboratory Details**	Tel:
Level 8, 540 Wickham Street	Lab. Name:	Fax:
Fortitude Valley, QLD, 4006	Lab. Address:	Preliminary Report by:
PO Box 1307 Fortitude Valley QLD 4006	Contact Name:	Final Report by:
Email reports to: [redacted]	Lab. Ref:	Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no. :

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
	0861_			-						2			
54 ✔	0861_MW072-210421	21/4/21		x						↓	x		
55 ✔	0861_MW050-210421	21/4/21		x							x		
56 ✔	0861_MW005-210421	21/4/21		x							x		
57 ✔	0861_MW006-210421	21/4/21		x							x		
58 ✔	0861_MW023-210421	21/4/21		x							x		
59 ✔	0861_MW046-200421	20/4/21		x							x		
60 ✔	0861_MW026-200421	20/4/21		x							x		
61 ✔	0861_MW044-210421	21/4/21		x							x		
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

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Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by:		Signed:	Date:	Relinquished by:	Signed: / Date:
Received by: [redacted]		Signed: [redacted]	Date: 22.4.21	Received by:	Signed: / Date:

1.55

QC 100, 1300 & 4003

AECOM — **Chain of Custody** — COC Page 7 of 12

AECOM Australia Pty Ltd	**Laboratory Details**	Tel:
Level 8, 540 Wickham Street	Lab. Name:	Fax:
Fortitude Valley, QLD, 4006	Lab. Address:	Preliminary Report by:
PO Box 1307 Fortitude Valley QLD 4006	Contact Name:	Final Report by:
Email reports to: [redacted]	Lab. Ref:	Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no. :

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
62 ✓	0861_QC334_210416	16.04.21		X						2	X		
63 ✓	0861_QC438_210416	16.04.21		X						2	X		
64 ✓	0861_QC145_210419	19/4/21		X						12	X		LD + MS
65 ✓	0861_QC146_210419	19/4/21			X					1	X		
66 ✓	0861_QC147_210419	19/4/21		X						12	X		LD + MS
67 ✓	0861_QC335_210419	19/4/21		X						2	X		
68 ✓	0861_QC459_210419	19/4/21		X						2	X		
69 ✓	0861_QC148_210420	20/4/21		X						12	X		LD + MS
70 ✓	0861_QC336_210420	20/4/21		X						2	X		
71 ✓	0861_QC440_210420	20/4/21		X						2	X		
72 ✓	0861_QC149_210421	21/4/21		X						12	X		LD TMS
73 ✓	0861_QC337_210421	21/4/21		X						2	X		
74 ✓	0861_QC441_210421	21/4/21		X						2	X		
75 ✓	0861_QC150_210421	21/4/21			X					1	X		

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Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by:	Signed:	Date:	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed: [redacted]	Date: 22.4.21	Received by:	Signed:	Date:

1.5°

QC 100s / 300s / 400s

AECOM — **Chain of Custody** — COC Page 8 of 12

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
76 ✓	0861_QC140-210412	12-04-21			X					1	X		
77 ✓	0861_QC141-210412	12-04-12		X						12	X		LD + MS
78 ✓	0861_QC330-210412	12-04-12		X						2	X		
79 ✓	0861_QC434-210412	12-04-12		X						2	X		
80 ✓	0861_QC511-210412	12-04-12		X						2	X		
81 ✓	0861_QC331-210413	13/4/21								2	X		
82 ✓	0861_QC435-210413	13/4/21								2	X		
83 ✓	0861_QC142-210412	14/4/21		X						12	X		LD + MS
84 ✓	0861_QC143-210412	14/4/21			X					1	X		
85 ✓	0861_QC332-210414	14/4/21		X						2	X		
86 ✓	0861_QC436-210414	14/4/21		X						2	X		
87 ✓	0861_QC144-210415	15/4/21		X						12	X		LD + MS
88 ✓	0861_QC333-210415	15/4/21		X						2	X		
89 ✓	0861_QC437-210415	15/4/21		X						2	X		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME
Temp. received: °C
Report & invoice: [redacted]
Lab Report No: Esky ID:

Relinquished by:	Signed:	Date:	Relinquished by: Signed: Date:
Received by: [redacted]	Signed: [redacted]	Date: 22.4.21	Received by: Signed: Date:

1.55

QC100s / 300s / 400s

AECOM — **Chain of Custody** — COC Page 9 of 12

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no.
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
90 ✓	0861_QC151_210421	21/4/21		x						12	x		
91	0861_QC512_210421	19/4/21		x						2	x		
92	0861_TripBlank_1				x					1	x		
93	0861_TripBlank_2				x					1	x		
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME
Temp. received: °C
Report & invoice: [redacted]
Lab Report No:
Esky ID:

Relinquished by: Signed: Date:
Received by: [redacted] Signed: [redacted] Date: 22.4.21
1.5°

Relinquished by: Signed: Date:
Received by: Signed: Date:

AEC006 | 210407 | AO Forward to NMI with this COC

AECOM

Due: 14/4/21

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name: NMI
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details:)	

6. Report Format: ESdat
7. Project Manager [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: fil'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
	0861_QC237_210330	30/3		✓				✓		1x 2P		N21/008926	forward to NMI
	0861_QC238_210330	"			✓			✓		1x P		N21/008927	
	0861_QC239_210330	"		✓				✓		1x 2P		N21/008928	
	0861_QC240_210330	"			✓			✓		1x 1P		N21/008929	
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

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BY: AO 13:00 C

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date:		Relinquished by: [redacted]	6/4/21	Signed:	Date:
Received by: [redacted]	Signed:	31/3/21	Date: 1110	Received by:		Signed:	Date:

CAB 10000 1532.

PLEASE FORWARD TO NMI QC 200s

AECOM — Chain of Custody — due 5/5/21 — COC Page 1 of 1

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details NMI
Lab. Name:
Lab. Address: # 198
Contact Name:
Lab. Ref: AEC0096/210428

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. :

Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	
6. Report Format: ESdat	7. Project Manager: [redacted]

	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filtered	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	Analysis Request: HOLD	Notes
N21/010834	0861_QC240_210412	12.04.12	~		X					1	X		
N21/010835	0861_QC241-210412	12.04.12		X						4	X		
N21/010836	0861_QC242-210414	14.04.21		X						4	X		
N21/010837	0861_QC243-210414	14.04.21			X					1	X		
N21/010838	0861_QC244-210415	15.04.21		X						4	X		
N21/010839	0861_QC245-210419	19/4/21		X						4	X		
N21/010840	0861_QC246-210419	19/4/21			X					1	X		
N21/010841	0861_QC247_210419	19/4/21		X						4	X		
N21/010842	0861_QC248_210420	20/4/21		X						4	X		
N21/010843	0861_QC249_210421	21/4/21		X						4	X		
N21/010844	0861_QC250_210421	21/4/21			X					1	X		
N21/010845	0861_QC251_210421	21/4/21		X						4	X		
	0861_												
	0861_												

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No/Esky ID

Relinquished by: [redacted] Signed: [redacted] Date: 22/4/21
Received by: Signed: Date:

Relinquished by: Signed: Date:
Received by: Signed: Date:

RECEIVED
28 APR 2021
BY: AM 14:45

LAB10009734

27/4/21

Appendix E

Laboratory Analytical Certificates and QA/QC Reports

Appendix E Laboratory Analytical Certificates and QA/QC Reports

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2108857**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Page	: 1 of 4
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 31-Mar-2021 11:10	Issue Date	: 01-Apr-2021
Client Requested Due Date	: 12-Apr-2021	Scheduled Reporting Date	: **12-Apr-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 2.9°C - Ice present
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 33 / 33

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***SRN Reissued 01/04/2021: As per the email from Camden McCosker 01/04/2021, the sample ID of ALS #33 has been changed to "0861_QC138_210330".***
- Please be advised that unlabelled sample container received has been allocated to 0861_SD037_210330 where no marked container was received for this sample. This is as per phone directive C. McCOSKER 01/04/2021 9:30am
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **An extra sample was received labelled as "0861_SD138_210330" and has been assigned analysis as per phone directive** [redacted]
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- **Samples QC237, QC2238, QC239 & QC240 have been forwarded to NMI, as requested. Please note that this will incur a freight forwarding fee.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2108857-018	30-Mar-2021 00:00	0861_SD041_210330	✓	✓
EB2108857-019	30-Mar-2021 00:00	0861_SD021_210330	✓	✓
EB2108857-020	30-Mar-2021 00:00	0861_QC509_210330	✓	✓
EB2108857-021	30-Mar-2021 00:00	0861_SD038_210330	✓	✓
EB2108857-022	30-Mar-2021 00:00	0861_SD003_210330	✓	✓
EB2108857-023	30-Mar-2021 00:00	0861_SD030_210330	✓	✓
EB2108857-024	30-Mar-2021 00:00	0861_SD076_210330	✓	✓
EB2108857-025	30-Mar-2021 00:00	0861_SD011_210330	✓	✓
EB2108857-026	30-Mar-2021 00:00	0861_SD027_210330	✓	✓
EB2108857-027	30-Mar-2021 00:00	0861_SD056_210330	✓	✓
EB2108857-028	30-Mar-2021 00:00	0861_SD002_210330	✓	✓
EB2108857-029	30-Mar-2021 00:00	0861_SD059_210330	✓	✓
EB2108857-030	30-Mar-2021 00:00	0861_SD037_210330	✓	✓
EB2108857-031	30-Mar-2021 00:00	0861_QC140_210330	✓	✓
EB2108857-032	30-Mar-2021 00:00	0861_SD039_210330	✓	✓
EB2108857-033	30-Mar-2021 00:00	0861_QC138_210330	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2108857-001	30-Mar-2021 00:00	0861_SW021_210330	✓
EB2108857-002	30-Mar-2021 00:00	0861_QC510_210330	✓
EB2108857-003	30-Mar-2021 00:00	0861_QC433_210330	✓
EB2108857-004	30-Mar-2021 00:00	0861_SW038_210330	✓
EB2108857-005	30-Mar-2021 00:00	0861_QC137_210330	✓
EB2108857-006	30-Mar-2021 00:00	0861_SW003_210330	✓
EB2108857-007	30-Mar-2021 00:00	0861_SW030_210330	✓

			WATER - EP231X PFAS - Full Suite (28 analytes)
EB2108857-008	30-Mar-2021 00:00	0861_SW076_210330	✓
EB2108857-009	30-Mar-2021 00:00	0861_SW011_210330	✓
EB2108857-010	30-Mar-2021 00:00	0861_SW027_210330	✓
EB2108857-011	30-Mar-2021 00:00	0861_SW056_210330	✓
EB2108857-012	30-Mar-2021 00:00	0861_SW002_210330	✓
EB2108857-013	30-Mar-2021 00:00	0861_SW059_210330	✓
EB2108857-014	30-Mar-2021 00:00	0861_SW037_210330	✓
EB2108857-015	30-Mar-2021 00:00	0861_QC139_210330	✓
EB2108857-016	30-Mar-2021 00:00	0861_SW039_210330	✓
EB2108857-017	30-Mar-2021 00:00	0861_SW041_210330	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2108857**	Page	: 1 of 19
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 31-Mar-2021 11:10
Order number	: 60612563 3.1	Date Analysis Commenced	: 01-Apr-2021
C-O-C number	: ----	Issue Date	: 12-Apr-2021 17:54
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 33		
No. of samples analysed	: 33		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Acid Sulfate Soil Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X PFAS: Particular samples required dilution prior to extraction due to matrix interferences. LOR values have been adjusted accordingly and surrogate recoveries not determined.
- EP231X PFAS: The LOR of particular analytes for sample “0861_SD039_210330” have been raised due to sample matrix interferences.
- EP231X PFAS: Matrix spike recovery not determined due to dilution of primary sample.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SD041_210330	0861_SD021_210330	0861_QC509_210330	0861_SD038_210330	0861_SD003_210330
				Sampling date / time	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00
					EB2108857-018	EB2108857-019	EB2108857-020	EB2108857-021	EB2108857-022
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**78.9**	**9.8**	**0.1**	**44.2**	**37.7**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		**0.0040**	**0.0009**	<0.0002	<0.0002	<0.0005
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		**0.0049**	**0.0011**	<0.0002	<0.0002	<0.0005
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0584**	**0.0052**	<0.0002	<0.0002	**0.0023**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		**0.0086**	<0.0002	<0.0002	<0.0002	<0.0005
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.655**	**0.0170**	<0.0002	**0.0010**	**0.0092**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		**0.0193**	**0.0012**	<0.0002	<0.0002	<0.0005
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.006	<0.001	<0.001	<0.001	<0.002
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		**0.0058**	**0.0011**	<0.0002	<0.0002	**0.0006**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0088**	**0.0035**	<0.0002	<0.0002	**0.0011**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		**0.0026**	**0.0007**	<0.0002	<0.0002	<0.0005
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		**0.0105**	**0.0009**	<0.0002	<0.0002	<0.0005
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0012	<0.0002	<0.0002	<0.0002	<0.0005
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0012	<0.0002	<0.0002	<0.0002	<0.0005
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		**0.0079**	**0.0002**	<0.0002	<0.0002	<0.0005
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		**0.0140**	**0.0003**	<0.0002	<0.0002	<0.0005
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		**0.0019**	**0.0003**	<0.0002	<0.0002	<0.0005
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0031	<0.0005	<0.0005	<0.0005	<0.0013
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		**0.0040**	**0.0003**	<0.0002	<0.0002	<0.0005
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0031	<0.0005	<0.0005	<0.0005	<0.0013

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD041_210330	0861_SD021_210330	0861_QC509_210330	0861_SD038_210330	0861_SD003_210330
				Sampling date / time	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00
Compound	CAS Number	LOR	Unit		EB2108857-018	EB2108857-019	EB2108857-020	EB2108857-021	EB2108857-022
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0031	<0.0005	<0.0005	<0.0005	<0.0013
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0031	<0.0005	<0.0005	<0.0005	<0.0013
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0031	<0.0005	<0.0005	<0.0005	<0.0013
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0012	<0.0002	<0.0002	<0.0002	<0.0005
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0012	<0.0002	<0.0002	<0.0002	<0.0005
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0012	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0012	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		**0.0040**	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		**0.0021**	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.812**	**0.0327**	<0.0002	**0.0010**	**0.0132**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.713**	**0.0222**	<0.0002	**0.0010**	**0.0115**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.749**	**0.0293**	<0.0002	**0.0010**	**0.0132**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**Not Determined**	**101**	**110**	**126**	**125**
13C8-PFOA	----	0.0002	%		**Not Determined**	**104**	**104**	**104**	**85.0**

Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SD030_210330	0861_SD076_210330	0861_SD011_210330	0861_SD027_210330	0861_SD056_210330
				Sampling date / time	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00
					EB2108857-023	EB2108857-024	EB2108857-025	EB2108857-026	EB2108857-027
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**46.4**	**66.1**	**29.7**	**34.3**	**63.4**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0026	**0.0013**	<0.0010	<0.0005	<0.0010
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0026	**0.0012**	<0.0010	**0.0005**	**0.0014**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0076**	**0.0131**	**0.0345**	**0.0065**	**0.0302**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0026	**0.0013**	**0.0031**	**0.0006**	**0.0091**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.106**	**0.0795**	**0.747**	**0.0608**	**0.611**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0026	<0.0010	<0.0010	<0.0005	<0.0010
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.013	<0.005	<0.005	<0.002	<0.005
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		**0.0057**	**0.0035**	**0.0048**	**0.0027**	**0.0041**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0033**	**0.0038**	**0.0044**	**0.0031**	**0.0058**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0026	**0.0012**	**0.0027**	**0.0008**	**0.0035**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0026	**0.0016**	**0.0040**	**0.0018**	**0.0068**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0026	<0.0010	**0.0033**	<0.0005	**0.0036**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0026	<0.0010	**0.0030**	**0.0008**	**0.0031**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		**0.0038**	**0.0016**	**0.0033**	**0.0010**	**0.0018**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		**0.0043**	**0.0022**	**0.0033**	**0.0016**	<0.0010
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0026	<0.0010	<0.0010	<0.0005	<0.0010
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0064	<0.0025	<0.0025	<0.0012	<0.0025
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0026	<0.0010	<0.0010	<0.0005	<0.0010
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0064	<0.0025	<0.0025	<0.0012	<0.0025

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD030_210330	0861_SD076_210330	0861_SD011_210330	0861_SD027_210330	0861_SD056_210330
				Sampling date / time	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00
Compound	CAS Number	LOR	Unit		EB2108857-023	EB2108857-024	EB2108857-025	EB2108857-026	EB2108857-027
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0064	<0.0025	<0.0025	<0.0012	<0.0025
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0064	<0.0025	<0.0025	<0.0012	<0.0025
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0064	<0.0025	<0.0025	<0.0012	<0.0025
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0026	<0.0010	<0.0010	<0.0005	<0.0010
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0026	<0.0010	<0.0010	<0.0005	<0.0010
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0026	<0.0010	<0.0010	<0.0005	<0.0010
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0026	**0.0014**	<0.0010	<0.0005	<0.0010
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0026	<0.0010	<0.0010	<0.0005	<0.0010
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0026	<0.0010	<0.0010	<0.0005	<0.0010
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.131**	**0.112**	**0.813**	**0.0802**	**0.680**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.114**	**0.0926**	**0.782**	**0.0673**	**0.641**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.123**	**0.105**	**0.797**	**0.0757**	**0.661**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**Not Determined**	**80.0**	**130**	**115**	**80.0**
13C8-PFOA	----	0.0002	%		**Not Determined**	**85.0**	**100**	**95.0**	**90.0**

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD002_210330	0861_SD059_210330	0861_SD037_210330	0861_QC140_210330	0861_SD039_210330
				Sampling date / time	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00
Compound	CAS Number	LOR	Unit		EB2108857-028	EB2108857-029	EB2108857-030	EB2108857-031	EB2108857-032
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**26.8**	**48.0**	**34.4**	**35.8**	**40.1**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0005	**0.0022**	<0.0005	**0.0004**	<0.0005
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0005	**0.0020**	<0.0005	**0.0004**	<0.0005
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0006**	**0.0199**	**0.0043**	**0.0046**	<0.0005
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0005	**0.0024**	**0.0006**	**0.0005**	<0.0005
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0080**	**0.244**	**0.0913**	**0.0776**	**0.0020**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		**0.0011**	**0.0013**	**0.0009**	**0.0010**	<0.0005
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.002	<0.002	<0.002	**0.001**	<0.002
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		**0.0010**	**0.0036**	**0.0040**	**0.0036**	<0.0005
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0008**	**0.0059**	**0.0023**	**0.0023**	<0.0005
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		**0.0008**	**0.0020**	**0.0012**	**0.0011**	<0.0005
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0005	**0.0046**	**0.0011**	**0.0012**	<0.0005
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0005	**0.0012**	**0.0008**	**0.0006**	<0.0005
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0005	**0.0014**	**0.0024**	**0.0015**	<0.0006
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0005	**0.0014**	**0.0014**	**0.0012**	<0.0042
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0005	**0.0008**	**0.0010**	**0.0012**	<0.0006
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0005	<0.0005	<0.0005	**0.0002**	<0.0005
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0012	<0.0012	<0.0012	<0.0005	<0.0012
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0005	<0.0005	<0.0005	<0.0002	<0.0005
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0012	<0.0012	<0.0012	<0.0005	<0.0012

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD002_210330	0861_SD059_210330	0861_SD037_210330	0861_QC140_210330	0861_SD039_210330
				Sampling date / time	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00
Compound	CAS Number	LOR	Unit		EB2108857-028	EB2108857-029	EB2108857-030	EB2108857-031	EB2108857-032
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0012	<0.0012	<0.0012	<0.0005	<0.0012
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0012	<0.0012	<0.0012	<0.0005	<0.0012
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0012	<0.0012	<0.0012	<0.0005	<0.0012
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0005	<0.0005	<0.0005	<0.0002	<0.0005
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0005	<0.0005	<0.0005	<0.0002	<0.0005
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	**0.0008**	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	**0.0006**	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0123**	**0.294**	**0.112**	**0.0984**	**0.0020**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0086**	**0.264**	**0.0956**	**0.0822**	**0.0020**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0112**	**0.283**	**0.104**	**0.0918**	**0.0020**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**105**	**Not Determined**	**Not Determined**	**109**	**125**
13C8-PFOA	----	0.0002	%		**95.0**	**Not Determined**	**Not Determined**	**100**	**95.0**

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_QC138_210330	----	----	----	----
				Sampling date / time	30-Mar-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2108857-033	--------	--------	--------	--------
					Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**47.7**	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0005	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0005	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0090**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		**0.0009**	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.134**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0005	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		**0.003**	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		**0.0061**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0039**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		**0.0021**	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		**0.0023**	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		**0.0033**	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		**0.0038**	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		**0.0065**	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		**0.0076**	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		**0.0022**	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		**0.0016**	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0012	----	----	----	----

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_QC138_210330	----	----	----	----
				Sampling date / time	30-Mar-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2108857-033	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0012	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0012	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0012	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0005	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		**0.0013**	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		**0.0012**	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		**0.0010**	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.190**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.143**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.163**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**130**	----	----	----	----
13C8-PFOA	----	0.0002	%		**105**	----	----	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW021_210330	0861_QC510_210330	0861_QC433_210330	0861_SW038_210330	0861_QC137_210330
				Sampling date / time	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00
					EB2108857-001	EB2108857-002	EB2108857-003	EB2108857-004	EB2108857-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**5.85**	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**5.28**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**23.0**	<0.02	<0.02	<0.02	**0.03**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.73**	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**16.4**	<0.01	<0.01	<0.01	**0.01**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		**0.05**	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**2.8**	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**5.89**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**18.5**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**2.65**	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**3.25**	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.08**	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		**0.02**	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		**0.03**	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW021_210330	0861_QC510_210330	0861_QC433_210330	0861_SW038_210330	0861_QC137_210330
				Sampling date / time	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00
Compound	CAS Number	LOR	Unit		EB2108857-001	EB2108857-002	EB2108857-003	EB2108857-004	EB2108857-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.10**	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**84.6**	<0.01	<0.01	<0.01	**0.04**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**39.4**	<0.01	<0.01	<0.01	**0.04**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**78.4**	<0.01	<0.01	<0.01	**0.04**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**72.0**	**72.7**	**79.6**	**79.5**	**86.3**
13C8-PFOA	----	0.02	%		**95.2**	**101**	**101**	**104**	**100**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW003_210330	0861_SW030_210330	0861_SW076_210330	0861_SW011_210330	0861_SW027_210330
				Sampling date / time	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00
					EB2108857-006	EB2108857-007	EB2108857-008	EB2108857-009	EB2108857-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.28**	**0.47**	**0.49**	**0.37**	**0.26**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.28**	**0.52**	**0.45**	**0.42**	**0.29**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**1.71**	**5.18**	**2.74**	**4.44**	**2.18**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.06**	**0.23**	**0.10**	**0.19**	**0.08**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.39**	**4.46**	**1.98**	**5.28**	**1.21**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.10	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.3**	**0.4**	**0.6**	**0.4**	**0.2**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.76**	**1.17**	**1.80**	**1.06**	**0.38**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.90**	**1.67**	**1.60**	**1.39**	**0.64**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.21**	**0.38**	**0.38**	**0.36**	**0.16**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.19**	**0.36**	**0.32**	**0.36**	**0.17**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	**0.03**	<0.10	**0.05**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.10	**0.02**	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.10	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.10	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.10	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.25	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.10	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.25	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.25	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW003_210330	0861_SW030_210330	0861_SW076_210330	0861_SW011_210330	0861_SW027_210330
				Sampling date / time	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00
Compound	CAS Number	LOR	Unit		EB2108857-006	EB2108857-007	EB2108857-008	EB2108857-009	EB2108857-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.25	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.25	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.10	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.10	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.10	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.18**	**1.99**	**2.26**	**3.33**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.10	**0.10**	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.10	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**6.26**	**16.9**	**12.7**	**17.8**	**5.57**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**3.10**	**9.64**	**4.72**	**9.72**	**3.39**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**5.92**	**16.1**	**12.2**	**17.1**	**5.20**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**76.9**	**83.1**	**85.2**	**76.3**	**73.0**
13C8-PFOA	----	0.02	%		**98.5**	**106**	**98.0**	**99.3**	**96.6**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW056_210330	0861_SW002_210330	0861_SW059_210330	0861_SW037_210330	0861_QC139_210330
				Sampling date / time	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00
					EB2108857-011	EB2108857-012	EB2108857-013	EB2108857-014	EB2108857-015
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.25**	**0.17**	**4.00**	**0.93**	**0.96**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.24**	**0.16**	**4.03**	**0.83**	**0.89**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**1.61**	**1.13**	**21.3**	**5.23**	**4.96**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.05**	**0.05**	**0.69**	**0.20**	**0.20**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.02**	**1.53**	**9.38**	**4.34**	**3.56**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.10	<0.10	<0.10
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.3**	**0.3**	**3.0**	<0.5	<0.5
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.77**	**0.75**	**9.12**	**1.36**	**1.32**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.83**	**0.74**	**14.6**	**2.00**	**2.03**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.18**	**0.25**	**2.79**	**0.42**	**0.39**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.18**	**0.22**	**3.62**	**0.58**	**0.56**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	**0.03**	**0.12**	<0.10	<0.10
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.10	<0.10	<0.10
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.10	<0.10	<0.10
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.10	<0.10	<0.10
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.10	<0.10	<0.10
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.25	<0.25	<0.25
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.10	<0.10	<0.10
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.25	<0.25	<0.25
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.25	<0.25	<0.25

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW056_210330	0861_SW002_210330	0861_SW059_210330	0861_SW037_210330	0861_QC139_210330
				Sampling date / time	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00	30-Mar-2021 00:00
Compound	CAS Number	LOR	Unit		EB2108857-011	EB2108857-012	EB2108857-013	EB2108857-014	EB2108857-015
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.25	<0.25	<0.25
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.25	<0.25	<0.25
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.10	<0.10	<0.10
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.10	<0.10	<0.10
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.10	<0.10	<0.10
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.25**	**0.19**	**3.08**	<0.10	<0.10
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.10	<0.10	<0.10
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.10	<0.10	<0.10
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**5.68**	**5.52**	**75.7**	**15.9**	**14.9**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**2.63**	**2.66**	**30.7**	**9.57**	**8.52**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**5.39**	**5.28**	**70.9**	**14.9**	**13.8**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**80.1**	**76.4**	**74.8**	**105**	**115**
13C8-PFOA	----	0.02	%		**105**	**104**	**100**	**98.9**	**110**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW039_210330	0861_SW041_210330	----	----	----
				Sampling date / time	30-Mar-2021 00:00	30-Mar-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2108857-016	EB2108857-017	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**1.23**	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**1.18**	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	**8.44**	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.50**	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**8.83**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.10	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.5	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.68**	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**2.26**	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.35**	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.48**	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.10	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.10	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.10	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.10	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.10	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.25	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.10	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.25	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.25	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW039_210330	0861_SW041_210330	----	----	----
				Sampling date / time	30-Mar-2021 00:00	30-Mar-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2108857-016	EB2108857-017	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.25	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.25	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.10	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.10	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.10	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.10	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.10	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.10	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**24.0**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**17.3**	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**22.3**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**115**	**117**	----	----	----
13C8-PFOA	----	0.02	%		**106**	**112**	----	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2108857**	Page	: 1 of 13
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 31-Mar-2021
Order number	: 60612563 3.1	Date Analysis Commenced	: 01-Apr-2021
C-O-C number	: ----	Issue Date	: 12-Apr-2021
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 33		
No. of samples analysed	: 33		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Acid Sulfate Soil Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3599866)									
EB2108815-041	Anonymous	EA055: Moisture Content	----	0.1	%	13.7	13.6	0.00	0% - 50%
EB2108857-025	0861_SD011_210330	EA055: Moisture Content	----	0.1	%	29.7	31.0	4.44	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3599851)									
EB2108815-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0003	0.0002	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
EB2108857-022	0861_SD003_210330	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0023	0.0013	53.1	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0092	0.0098	6.48	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3599852)									
EB2108857-032	0861_SD039_210330	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0020	0.0017	13.5	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3599851)									
EB2108815-002	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3599851) - continued									
EB2108815-002	Anonymous	EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EB2108857-022	0861_SD003_210330	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0006	0.0008	17.8	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0011	0.0009	21.1	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0013	<0.0012	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.002	<0.002	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3599852)									
EB2108857-032	0861_SD039_210330	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0006	<0.0006	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0042	<0.0060	35.3	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0006	<0.0012	66.7	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0012	<0.0012	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.002	<0.002	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3599851)									
EB2108815-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3599851) - continued									
EB2108815-002	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EB2108857-022	0861_SD003_210330	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0013	<0.0012	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0013	<0.0012	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0013	<0.0012	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0013	<0.0012	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3599852)									
EB2108857-032	0861_SD039_210330	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0012	<0.0012	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0012	<0.0012	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0012	<0.0012	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0012	<0.0012	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3599851)									
EB2108815-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3599851) - continued									
EB2108815-002	Anonymous	EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EB2108857-022	0861_SD003_210330	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3599852)									
EB2108857-032	0861_SD039_210330	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3604446)									
EB2108857-001	0861_SW021_210330	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	16.4	15.9	3.67	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	5.85	5.91	1.12	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	5.28	5.16	2.29	0% - 20%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	23.0	22.8	0.732	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.73	0.76	4.19	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	0.05	0.06	20.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3604446)									
EB2108857-001	0861_SW021_210330	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	3.25	3.37	3.68	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	5.89	5.78	1.97	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	18.5	18.0	2.72	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	2.65	2.68	1.02	0% - 20%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	0.08	0.08	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	0.02	0.03	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3604446) - continued									
EB2108857-001	0861_SW021_210330	EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	2.8	2.8	0.00	0% - 20%
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3604446)									
EB2108857-001	0861_SW021_210330	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	0.03	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3604446)									
EB2108857-001	0861_SW021_210330	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.10	0.10	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3604446)									
EB2108857-001	0861_SW021_210330	EP231X: Sum of PFAS	----	0.01	µg/L	84.6	83.4	1.43	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	39.4	38.7	1.79	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	78.4	77.3	1.41	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3599851)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	87.7	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	80.8	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	84.3	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	84.4	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	97.4	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	103	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3599852)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	81.4	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	73.5	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	83.5	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	75.2	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	80.6	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	84.6	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3599851)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	79.8	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	82.8	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	77.6	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	79.6	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.6	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.6	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.2	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	80.8	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.0	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	77.6	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	90.1	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3599852)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	78.2	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.6	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	72.0	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	76.8	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	74.8	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	78.4	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	74.0	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	80.0	64.0	136

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3599852) - continued								
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	79.2	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	80.4	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	83.8	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3599851)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	80.6	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	85.1	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	89.9	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	80.1	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	78.8	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	70.8	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3599852)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	70.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	90.4	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	90.1	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	82.5	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	87.8	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.8	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	78.4	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3599851)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	85.5	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	75.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	96.2	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	90.0	54.8	124
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3599852)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	90.6	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	93.6	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	89.6	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	84.6	54.8	124

Sub-Matrix: **WATER**

	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
		Spike	Spike Recovery (%)	Acceptable Limits (%)

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3604446)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	90.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	100	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	95.0	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	96.4	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	97.6	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	91.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3604446)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	89.3	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	94.8	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	89.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	97.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	95.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	92.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	92.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	89.2	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	93.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	74.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	85.0	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3604446)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	91.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	89.8	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	83.8	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	79.2	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	98.3	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	77.8	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	93.4	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3604446)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	97.1	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	99.9	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	105	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	95.0	64.2	133
EP231P: PFAS Sums (QCLot: 3604446)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231P: PFAS Sums (QCLot: 3604446) - continued								
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3599851)							
EB2108815-005	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	92.3	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	82.9	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	85.6	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	89.5	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	85.4	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	94.6	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3599852)							
EB2108857-033	0861_QC138_210330	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	# Not Determined	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	# Not Determined	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	# Not Determined	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	# Not Determined	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3599851)							
EB2108815-005	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	85.0	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	86.0	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	85.2	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	86.0	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	88.8	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	85.2	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	86.8	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	91.2	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	82.0	69.0	135

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3599851) - continued							
EB2108815-005	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	85.6	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	90.5	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3599852)							
EB2108857-033	0861_QC138_210330	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	# Not Determined	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	# Not Determined	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	# Not Determined	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	# Not Determined	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	# Not Determined	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	# Not Determined	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	# Not Determined	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	# Not Determined	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	# Not Determined	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	# Not Determined	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3599851)							
EB2108815-005	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	94.0	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	90.2	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	82.5	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	90.2	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	92.0	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	88.4	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	83.2	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3599852)							

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3599852) - continued							
EB2108857-033	0861_QC138_210330	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	# Not Determined	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	# Not Determined	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	# Not Determined	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3599851)							
EB2108815-005	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	85.5	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	77.5	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	97.5	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	83.3	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3599852)							
EB2108857-033	0861_QC138_210330	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	# Not Determined	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	# Not Determined	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	# Not Determined	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	# Not Determined	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3604446)							
EB2108857-008	0861_SW076_210330	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	86.3	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	90.0	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	92.9	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	96.6	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	102	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	90.4	53.0	142

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3604446)							
EB2108857-008	0861_SW076_210330	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	103	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	86.2	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	95.2	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	95.2	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	95.4	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	104	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	117	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	97.8	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	106	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	96.2	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	88.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3604446)							
EB2108857-008	0861_SW076_210330	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	81.4	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	88.2	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	91.9	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	91.6	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	82.2	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	93.2	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	80.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3604446)							
EB2108857-008	0861_SW076_210330	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	94.9	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	90.6	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	74.6	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	98.3	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2108857**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 31-Mar-2021
Site	: ----	Issue Date	: 12-Apr-2021
Sampler	: ----	No. of samples received	: 33
Order number	: 60612563 3.1	No. of samples analysed	: 33

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2108857--033	0861_QC138_210330	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	19	5.26	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*	***Sample Date***	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055)							
0861_SD041_210330, 0861_SD021_210330, 0861_QC509_210330, 0861_SD038_210330, 0861_SD003_210330, 0861_SD030_210330, 0861_SD076_210330, 0861_SD011_210330, 0861_SD027_210330, 0861_SD056_210330, 0861_SD002_210330, 0861_SD059_210330, 0861_SD037_210330, 0861_QC140_210330, 0861_SD039_210330, 0861_QC138_210330	**30-Mar-2021**	**----**	----	----	**01-Apr-2021**	13-Apr-2021	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0861_SD041_210330, 0861_SD021_210330, 0861_QC509_210330, 0861_SD038_210330, 0861_SD003_210330, 0861_SD030_210330, 0861_SD076_210330, 0861_SD011_210330, 0861_SD027_210330, 0861_SD056_210330, 0861_SD002_210330, 0861_SD059_210330, 0861_SD037_210330, 0861_QC140_210330, 0861_SD039_210330, 0861_QC138_210330	**30-Mar-2021**	**08-Apr-2021**	26-Sep-2021	✓	**08-Apr-2021**	18-May-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X)							
0861_SD041_210330, 0861_SD021_210330, 0861_QC509_210330, 0861_SD038_210330, 0861_SD003_210330, 0861_SD030_210330, 0861_SD076_210330, 0861_SD011_210330, 0861_SD027_210330, 0861_SD056_210330, 0861_SD002_210330, 0861_SD059_210330, 0861_SD037_210330, 0861_QC140_210330, 0861_SD039_210330, 0861_QC138_210330	**30-Mar-2021**	**08-Apr-2021**	26-Sep-2021	✓	**08-Apr-2021**	18-May-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X)							
0861_SD041_210330, 0861_SD021_210330, 0861_QC509_210330, 0861_SD038_210330, 0861_SD003_210330, 0861_SD030_210330, 0861_SD076_210330, 0861_SD011_210330, 0861_SD027_210330, 0861_SD056_210330, 0861_SD002_210330, 0861_SD059_210330, 0861_SD037_210330, 0861_QC140_210330, 0861_SD039_210330, 0861_QC138_210330	**30-Mar-2021**	**08-Apr-2021**	26-Sep-2021	✓	**08-Apr-2021**	18-May-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0861_SD041_210330, 0861_SD021_210330, 0861_QC509_210330, 0861_SD038_210330, 0861_SD003_210330, 0861_SD030_210330, 0861_SD076_210330, 0861_SD011_210330, 0861_SD027_210330, 0861_SD056_210330, 0861_SD002_210330, 0861_SD059_210330, 0861_SD037_210330, 0861_QC140_210330, 0861_SD039_210330, 0861_QC138_210330	**30-Mar-2021**	**08-Apr-2021**	26-Sep-2021	✓	**08-Apr-2021**	18-May-2021	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X)							
0861_SD041_210330, 0861_SD021_210330, 0861_QC509_210330, 0861_SD038_210330, 0861_SD003_210330, 0861_SD030_210330, 0861_SD076_210330, 0861_SD011_210330, 0861_SD027_210330, 0861_SD056_210330, 0861_SD002_210330, 0861_SD059_210330, 0861_SD037_210330, 0861_QC140_210330, 0861_SD039_210330, 0861_QC138_210330	**30-Mar-2021**	**08-Apr-2021**	26-Sep-2021	✓	**08-Apr-2021**	18-May-2021	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_SW021_210330, 0861_QC510_210330, 0861_QC433_210330, 0861_SW038_210330, 0861_QC137_210330, 0861_SW003_210330, 0861_SW030_210330, 0861_SW076_210330, 0861_SW011_210330, 0861_SW027_210330, 0861_SW056_210330, 0861_SW002_210330, 0861_SW059_210330, 0861_SW037_210330, 0861_QC139_210330, 0861_SW039_210330, 0861_SW041_210330	**30-Mar-2021**	**08-Apr-2021**	26-Sep-2021	✓	**08-Apr-2021**	26-Sep-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0861_SW021_210330, 0861_QC510_210330, 0861_QC433_210330, 0861_SW038_210330, 0861_QC137_210330, 0861_SW003_210330, 0861_SW030_210330, 0861_SW076_210330, 0861_SW011_210330, 0861_SW027_210330, 0861_SW056_210330, 0861_SW002_210330, 0861_SW059_210330, 0861_SW037_210330, 0861_QC139_210330, 0861_SW039_210330, 0861_SW041_210330	**30-Mar-2021**	**08-Apr-2021**	26-Sep-2021	✓	**08-Apr-2021**	26-Sep-2021	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0861_SW021_210330, 0861_QC510_210330, 0861_QC433_210330, 0861_SW038_210330, 0861_QC137_210330, 0861_SW003_210330, 0861_SW030_210330, 0861_SW076_210330, 0861_SW011_210330, 0861_SW027_210330, 0861_SW056_210330, 0861_SW002_210330, 0861_SW059_210330, 0861_SW037_210330, 0861_QC139_210330, 0861_SW039_210330, 0861_SW041_210330	**30-Mar-2021**	**08-Apr-2021**	26-Sep-2021	✓	**08-Apr-2021**	26-Sep-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_SW021_210330, 0861_QC510_210330, 0861_QC433_210330, 0861_SW038_210330, 0861_QC137_210330, 0861_SW003_210330, 0861_SW030_210330, 0861_SW076_210330, 0861_SW011_210330, 0861_SW027_210330, 0861_SW056_210330, 0861_SW002_210330, 0861_SW059_210330, 0861_SW037_210330, 0861_QC139_210330, 0861_SW039_210330, 0861_SW041_210330	**30-Mar-2021**	**08-Apr-2021**	26-Sep-2021	✓	**08-Apr-2021**	26-Sep-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0861_SW021_210330, 0861_QC510_210330, 0861_QC433_210330, 0861_SW038_210330, 0861_QC137_210330, 0861_SW003_210330, 0861_SW030_210330, 0861_SW076_210330, 0861_SW011_210330, 0861_SW027_210330, 0861_SW056_210330, 0861_SW002_210330, 0861_SW059_210330, 0861_SW037_210330, 0861_QC139_210330, 0861_SW039_210330, 0861_SW041_210330	**30-Mar-2021**	**08-Apr-2021**	26-Sep-2021	✓	**08-Apr-2021**	26-Sep-2021	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	23	**13.04**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	23	**8.70**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	23	**8.70**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	23	**8.70**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2111111**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: BRISBANE	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0861_PFASOMP	Page	: 1 of 3
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 22-Apr-2021 13:55	Issue Date	: 23-Apr-2021
Client Requested Due Date	: 04-May-2021	Scheduled Reporting Date	: **04-May-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 5	Temperature	: 23.3, 21.9, 23.9, 24.1, 4°C
Receipt Detail	: MEDIUM ESKIES	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2111111-001	21-Apr-2021 00:00	0861_MW054S_210421	✓
EB2111111-002	21-Apr-2021 00:00	0861_MW054D_210421	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2111111**	Page	: 1 of 5
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: Christopher Redford
Address	: BRISBANE	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 22-Apr-2021 13:55
Order number	: 60612563 3.1	Date Analysis Commenced	: 30-Apr-2021
C-O-C number	: ----	Issue Date	: 04-May-2021 13:07
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X PFAS: The LORs for PFBS and PFBA for sample '0861_MW054S_210421' have been raised due to matrix interference.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW054S_210421	0861_MW054D_210421	----	----	----
				Sampling date / time	21-Apr-2021 00:00	21-Apr-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2111111-001	EB2111111-002	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.05	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.10**	**0.01**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.2	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0861_MW054S_210421	0861_MW054D_210421	----	----	----
			Sampling date / time	21-Apr-2021 00:00	21-Apr-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EB2111111-001	EB2111111-002	--------	--------	--------
				Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	----	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.01	µg/L	**0.10**	**0.01**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**0.10**	**0.01**	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	**0.10**	**0.01**	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**98.5**	**107**	----	----	----
13C8-PFOA	----	0.02	%	**109**	**102**	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2111111**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: BRISBANE	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 22-Apr-2021
Order number	: 60612563 3.1	Date Analysis Commenced	: 30-Apr-2021
C-O-C number	: ----	Issue Date	: 04-May-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3647031)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	107	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	110	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	92.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	86.1	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	103	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	102	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3647031)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	113	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	118	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	110	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	114	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	110	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	109	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	112	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	96.0	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	97.0	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	100	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	110	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3647031)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	105	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	132	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	114	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	112	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	123	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	82.0	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	97.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3647031)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	100	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	110	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	103	67.0	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3647031) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	99.2	64.2	133
EP231P: PFAS Sums (QCLot: 3647031)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2111111**	Page	: 1 of 4
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 22-Apr-2021
Site	: ----	Issue Date	: 04-May-2021
Sampler	: [redacted]	No. of samples received	: 2
Order number	: 60612563 3.1	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	20	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_MW054S_210421, 0861_MW054D_210421	**21-Apr-2021**	**30-Apr-2021**	18-Oct-2021	✓	**30-Apr-2021**	18-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0861_MW054S_210421, 0861_MW054D_210421	**21-Apr-2021**	**30-Apr-2021**	18-Oct-2021	✓	**30-Apr-2021**	18-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0861_MW054S_210421, 0861_MW054D_210421	**21-Apr-2021**	**30-Apr-2021**	18-Oct-2021	✓	**30-Apr-2021**	18-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_MW054S_210421, 0861_MW054D_210421	**21-Apr-2021**	**30-Apr-2021**	18-Oct-2021	✓	**30-Apr-2021**	18-Oct-2021	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0861_MW054S_210421, 0861_MW054D_210421	**21-Apr-2021**	**30-Apr-2021**	18-Oct-2021	✓	**30-Apr-2021**	18-Oct-2021	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2111112**		
Amendment	: **1**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: BRISBANE	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0861_PFASOMP	Page	: 1 of 3
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 22-Apr-2021 13:55	Issue Date	: 11-May-2021
Client Requested Due Date	: 04-May-2021	Scheduled Reporting Date	: **04-May-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 5	Temperature	: 23.3, 21.9, 23.9, 24.1, 4°C
Receipt Detail	: MEDIUM ESKIES	No. of samples received / analysed	: 16 / 16

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2111112-011	15-Apr-2021 00:00	0861_SD043_210415	✓	✓
EB2111112-012	15-Apr-2021 00:00	0861_SD098_210415	✓	✓
EB2111112-013	16-Apr-2021 00:00	0861_SD026_210416	✓	✓
EB2111112-014	21-Apr-2021 00:00	0861_SD025_210421	✓	✓
EB2111112-015	15-Apr-2021 00:00	0861_SD045_210415	✓	✓
EB2111112-016	15-Apr-2021 00:00	0861_SD040_210415	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2111112-001	15-Apr-2021 00:00	0861_SW043_210415	✓
EB2111112-002	15-Apr-2021 00:00	0861_SW098_210415	✓
EB2111112-003	15-Apr-2021 00:00	0861_MW056I_210415	✓
EB2111112-004	15-Apr-2021 00:00	0861_MW056S_210415	✓
EB2111112-005	21-Apr-2021 00:00	0861_MW057S_210421	✓
EB2111112-006	16-Apr-2021 00:00	0861_SW026_210416	✓
EB2111112-007	21-Apr-2021 00:00	0861_SW025_210421	✓
EB2111112-008	15-Apr-2021 00:00	0861_SW045_210415	✓
EB2111112-009	21-Apr-2021 00:00	0861_MW057I_210421	✓
EB2111112-010	15-Apr-2021 00:00	0861_SW040_210415	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2111112**	Page	: 1 of 11
Amendment	: **1**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: BRISBANE	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 22-Apr-2021 13:55
Order number	: 60612563 3.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 11-May-2021 13:47
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 16		
No. of samples analysed	: 16		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment (DD/MM/YYYY): This report has been amended as a result of a request to change sample identification numbers (IDs) received from Serena Thomas on 11/05/21, for samples 3 and 9. All analysis results are as per the previous report.
- EP231X PFAS: The LORs of particular analytes have been raised for particular samples due to matrix interferences.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SD043_210415	0861_SD098_210415	0861_SD026_210416	0861_SD025_210421	0861_SD045_210415
				Sampling date / time	15-Apr-2021 00:00	15-Apr-2021 00:00	16-Apr-2021 00:00	21-Apr-2021 00:00	15-Apr-2021 00:00
					EB2111112-011	EB2111112-012	EB2111112-013	EB2111112-014	EB2111112-015
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**38.5**	**35.6**	**46.7**	**27.0**	**36.9**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	**0.0004**	**0.0003**	<0.0002	**0.0003**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0006	**0.0075**	**0.0089**	<0.0002	**0.0031**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0010	<0.0015	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	**0.0006**	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	**0.0005**	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	**0.0003**	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0004	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0004	<0.0006	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD043_210415	0861_SD098_210415	0861_SD026_210416	0861_SD025_210421	0861_SD045_210415
				Sampling date / time	15-Apr-2021 00:00	15-Apr-2021 00:00	16-Apr-2021 00:00	21-Apr-2021 00:00	15-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111112-011	EB2111112-012	EB2111112-013	EB2111112-014	EB2111112-015
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	**0.0093**	**0.0092**	<0.0002	**0.0034**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	**0.0079**	**0.0092**	<0.0002	**0.0034**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	**0.0093**	**0.0092**	<0.0002	**0.0034**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**136**	**108**	**132**	**114**	**114**
13C8-PFOA	----	0.0002	%		**108**	**105**	**131**	**104**	**102**

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD040_210415	----	----	----	----
				Sampling date / time	15-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2111112-016	--------	--------	--------	--------
					Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**29.0**	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0009**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	----	----	----	----

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD040_210415	----	----	----	----
				Sampling date / time	15-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2111112-016	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0009**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0009**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0009**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**104**	----	----	----	----
13C8-PFOA	----	0.0002	%		**97.0**	----	----	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW043_210415	0861_SW098_210415	0861_MW056I_210415	0861_MW056S_210415	0861_MW057S_210421
				Sampling date / time	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	21-Apr-2021 00:00
					EB2111112-001	EB2111112-002	EB2111112-003	EB2111112-004	EB2111112-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.02**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.05**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**0.04**	<0.01	**0.01**	**0.03**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW043_210415	0861_SW098_210415	0861_MW056I_210415	0861_MW056S_210415	0861_MW057S_210421
				Sampling date / time	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	21-Apr-2021 00:00
					EB2111112-001	EB2111112-002	EB2111112-003	EB2111112-004	EB2111112-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**0.04**	<0.01	**0.01**	**0.10**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.04**	<0.01	**0.01**	**0.08**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.04**	<0.01	**0.01**	**0.10**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**109**	**108**	**110**	**117**	**104**
13C8-PFOA	----	0.02	%		**104**	**103**	**101**	**103**	**106**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW026_210416	0861_SW025_210421	0861_SW045_210415	0861_MW057I_210421	0861_SW040_210415
				Sampling date / time	16-Apr-2021 00:00	21-Apr-2021 00:00	15-Apr-2021 00:00	21-Apr-2021 00:00	15-Apr-2021 00:00
					EB2111112-006	EB2111112-007	EB2111112-008	EB2111112-009	EB2111112-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	<0.02	**0.02**	<0.02	**0.03**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.03**	<0.01	**0.05**	<0.01	**0.06**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW026_210416	0861_SW025_210421	0861_SW045_210415	0861_MW057I_210421	0861_SW040_210415
				Sampling date / time	16-Apr-2021 00:00	21-Apr-2021 00:00	15-Apr-2021 00:00	21-Apr-2021 00:00	15-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111112-006	EB2111112-007	EB2111112-008	EB2111112-009	EB2111112-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.03**	<0.01	**0.07**	<0.01	**0.09**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.03**	<0.01	**0.07**	<0.01	**0.09**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.03**	<0.01	**0.07**	<0.01	**0.09**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**113**	**116**	**123**	**114**	**108**
13C8-PFOA	----	0.02	%		**103**	**103**	**101**	**102**	**104**

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2111112**	Page	: 1 of 8
Amendment	: **1**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: BRISBANE	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 22-Apr-2021
Order number	: 60612563 3.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 11-May-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 16		
No. of samples analysed	: 16		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3643112)									
EB2111112-011	0861_SD043_210415	EA055: Moisture Content	----	0.1	%	38.5	38.2	0.880	0% - 20%
EB2111116-025	Anonymous	EA055: Moisture Content	----	0.1	%	37.4	40.7	8.39	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3643111)									
EB2111112-011	0861_SD043_210415	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0006	<0.0010	50.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
EB2111116-025	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0045	0.0046	3.36	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	0.0080	0.0073	8.48	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0884	0.0753	16.0	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0066	0.0062	5.15	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.915	0.759	18.7	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0630	0.0525	18.1	0% - 20%
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643111)									
EB2111112-011	0861_SD043_210415	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643111) - continued									
EB2111112-011	0861_SD043_210415	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EB2111116-025	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0066	0.0059	10.4	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0237	0.0204	14.6	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0054	0.0043	23.1	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0195	0.0158	21.0	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	0.0019	0.0016	18.3	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0014	0.0011	25.1	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0024	0.0019	22.4	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0045	0.0035	24.1	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	0.0029	0.0022	25.1	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0025	<0.0025	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.005	<0.005	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643111)									
EB2111112-011	0861_SD043_210415	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EB2111116-025	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	0.0179	0.0142	23.0	0% - 50%
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0010	<0.0010	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0010	<0.0010	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0025	<0.0025	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0025	<0.0025	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0025	<0.0025	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0025	<0.0025	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643111)									
EB2111112-011	0861_SD043_210415	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EB2111116-025	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0010	<0.0010	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0010	<0.0010	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0010	<0.0010	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0010	<0.0010	0.00	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3643111)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	100	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	88.9	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	84.3	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	91.6	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	82.3	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	83.8	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643111)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	98.7	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	100	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.0	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.6	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	93.6	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.6	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.8	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.4	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	93.6	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643111)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	95.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	98.4	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	92.9	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	93.4	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	101	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.0	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.0	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643111)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	95.7	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	93.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	79.2	65.0	137

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643111) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	95.4	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3647031)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	107	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	110	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	92.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	86.1	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	103	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	102	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3647031)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	113	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	118	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	110	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	114	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	110	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	109	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	112	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	96.0	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	97.0	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	100	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	110	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3647031)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	105	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	132	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	114	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	112	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	123	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	82.0	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	97.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3647031)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	100	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	110	64.0	140

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3647031) - continued								
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	103	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	99.2	64.2	133
EP231P: PFAS Sums (QCLot: 3647031)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3643111)							
EB2111112-012	0861_SD098_210415	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	104	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	88.0	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	80.9	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	85.7	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	63.8	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643111)							
EB2111112-012	0861_SD098_210415	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	100	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	108	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	103	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	102	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	98.0	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	92.0	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	114	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	105	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	78.0	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	131	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	103	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643111)							
EB2111112-012	0861_SD098_210415	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	103	48.0	128

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643111) - continued							
EB2111112-012	0861_SD098_210415	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	114	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	93.1	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	91.7	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	107	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	77.6	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	71.2	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643111)							
EB2111112-012	0861_SD098_210415	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	105	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	97.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	114	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	85.8	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2111112**	Page	: 1 of 7
Amendment	: **1**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 22-Apr-2021
Site	: ----	Issue Date	: 11-May-2021
Sampler	: [redacted]	No. of samples received	: 16
Order number	: 60612563 3.1	No. of samples analysed	: 16

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2111112--012	0861_SD098_210415	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	20	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)	*Sample Date*	*Extraction / Preparation* Date extracted	Due for extraction	Evaluation	*Analysis* Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) 0861_SD043_210415, 0861_SD045_210415, 0861_SD098_210415, 0861_SD040_210415	**15-Apr-2021**	**----**	----	----	**27-Apr-2021**	29-Apr-2021	✓
HDPE Soil Jar (EA055) 0861_SD026_210416	**16-Apr-2021**	**----**	----	----	**27-Apr-2021**	30-Apr-2021	✓
HDPE Soil Jar (EA055) 0861_SD025_210421	**21-Apr-2021**	**----**	----	----	**27-Apr-2021**	05-May-2021	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD043_210415, 0861_SD045_210415, 0861_SD098_210415, 0861_SD040_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD026_210416	**16-Apr-2021**	**27-Apr-2021**	13-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD025_210421	**21-Apr-2021**	**27-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0861_SD043_210415, 0861_SD098_210415, 0861_SD045_210415, 0861_SD040_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD026_210416	**16-Apr-2021**	**27-Apr-2021**	13-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD025_210421	**21-Apr-2021**	**27-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0861_SD043_210415, 0861_SD098_210415, 0861_SD045_210415, 0861_SD040_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD026_210416	**16-Apr-2021**	**27-Apr-2021**	13-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD025_210421	**21-Apr-2021**	**27-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD043_210415, 0861_SD098_210415, 0861_SD045_210415, 0861_SD040_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD026_210416	**16-Apr-2021**	**27-Apr-2021**	13-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD025_210421	**21-Apr-2021**	**27-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0861_SD043_210415, 0861_SD098_210415, 0861_SD045_210415, 0861_SD040_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD026_210416	**16-Apr-2021**	**27-Apr-2021**	13-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD025_210421	**21-Apr-2021**	**27-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_SW043_210415, 0861_SW098_210415, 0861_MW056I_210415, 0861_MW056S_210415, 0861_SW045_210415, 0861_SW040_210415	**15-Apr-2021**	**30-Apr-2021**	12-Oct-2021	✓	**30-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW026_210416	**16-Apr-2021**	**30-Apr-2021**	13-Oct-2021	✓	**30-Apr-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_MW057S_210421, 0861_SW025_210421, 0861_MW057I_210421	**21-Apr-2021**	**30-Apr-2021**	18-Oct-2021	✓	**30-Apr-2021**	18-Oct-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0861_SW043_210415, 0861_SW098_210415, 0861_MW056I_210415, 0861_MW056S_210415, 0861_SW045_210415, 0861_SW040_210415	**15-Apr-2021**	**30-Apr-2021**	12-Oct-2021	✓	**30-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW026_210416	**16-Apr-2021**	**30-Apr-2021**	13-Oct-2021	✓	**30-Apr-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_MW057S_210421, 0861_SW025_210421, 0861_MW057I_210421	**21-Apr-2021**	**30-Apr-2021**	18-Oct-2021	✓	**30-Apr-2021**	18-Oct-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0861_SW043_210415, 0861_SW098_210415, 0861_MW056I_210415, 0861_MW056S_210415, 0861_SW045_210415, 0861_SW040_210415	**15-Apr-2021**	**30-Apr-2021**	12-Oct-2021	✓	**30-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW026_210416	**16-Apr-2021**	**30-Apr-2021**	13-Oct-2021	✓	**30-Apr-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_MW057S_210421, 0861_SW025_210421, 0861_MW057I_210421	**21-Apr-2021**	**30-Apr-2021**	18-Oct-2021	✓	**30-Apr-2021**	18-Oct-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_SW043_210415, 0861_SW098_210415, 0861_MW056I_210415, 0861_MW056S_210415, 0861_SW045_210415, 0861_SW040_210415	**15-Apr-2021**	**30-Apr-2021**	12-Oct-2021	✓	**30-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW026_210416	**16-Apr-2021**	**30-Apr-2021**	13-Oct-2021	✓	**30-Apr-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_MW057S_210421, 0861_SW025_210421, 0861_MW057I_210421	**21-Apr-2021**	**30-Apr-2021**	18-Oct-2021	✓	**30-Apr-2021**	18-Oct-2021	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0861_SW043_210415, 0861_SW098_210415, 0861_MW056I_210415, 0861_MW056S_210415, 0861_SW045_210415, 0861_SW040_210415	**15-Apr-2021**	**30-Apr-2021**	12-Oct-2021	✓	**30-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW026_210416	**16-Apr-2021**	**30-Apr-2021**	13-Oct-2021	✓	**30-Apr-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_MW057S_210421, 0861_SW025_210421, 0861_MW057I_210421	**21-Apr-2021**	**30-Apr-2021**	18-Oct-2021	✓	**30-Apr-2021**	18-Oct-2021	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2111116**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: BRISBANE	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0861_PFASOMP	Page	: 1 of 3
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 22-Apr-2021 13:55	Issue Date	: 23-Apr-2021
Client Requested Due Date	: 04-May-2021	Scheduled Reporting Date	: **04-May-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 5	Temperature	: 23.3, 21.9, 23.9, 24.1, 4°C
Receipt Detail	: MEDIUM ESKIES	No. of samples received / analysed	: 30 / 30

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **SPLIT WORK ORDER: It should be noted that ALS has split this work order over the following work orders (EB2111121, EB2111116) due to the size of the sample numbers. For any further information regarding this processing of samples please contact ALS client services division on ALSEnviro.Brisbane@alsglobal.com**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2111116-001	12-Apr-2021 00:00	0861_SD048_210412	✓	✓
EB2111116-002	12-Apr-2021 00:00	0861_SD005_210412	✓	✓
EB2111116-003	12-Apr-2021 00:00	0861_SD015_210412	✓	✓
EB2111116-004	12-Apr-2021 00:00	0861_SD016_210412	✓	✓
EB2111116-005	12-Apr-2021 00:00	0861_SD018_210412	✓	✓
EB2111116-006	12-Apr-2021 00:00	0861_SD034_210412	✓	✓
EB2111116-007	12-Apr-2021 00:00	0861_SD020_210412	✓	✓
EB2111116-008	12-Apr-2021 00:00	0861_SD028_210412	✓	✓
EB2111116-009	13-Apr-2021 00:00	0861_SD051_210413	✓	✓
EB2111116-010	13-Apr-2021 00:00	0861_SD099_210413	✓	✓
EB2111116-011	13-Apr-2021 00:00	0861_SD100_210413	✓	✓
EB2111116-012	13-Apr-2021 00:00	0861_SD049_210413	✓	✓
EB2111116-013	13-Apr-2021 00:00	0861_SD089_210413	✓	✓
EB2111116-014	13-Apr-2021 00:00	0861_SD052_210413	✓	✓
EB2111116-015	13-Apr-2021 00:00	0861_SD088_210413	✓	✓
EB2111116-016	14-Apr-2021 00:00	0861_SD091_210414	✓	✓
EB2111116-017	14-Apr-2021 00:00	0861_SD090_210414	✓	✓
EB2111116-018	14-Apr-2021 00:00	0861_SD047_210414	✓	✓
EB2111116-019	14-Apr-2021 00:00	0861_SD050_210414	✓	✓
EB2111116-020	14-Apr-2021 00:00	0861_SD036_210414	✓	✓
EB2111116-021	14-Apr-2021 00:00	0861_SD094_210414	✓	✓
EB2111116-022	14-Apr-2021 00:00	0861_SD009_210414	✓	✓
EB2111116-023	14-Apr-2021 00:00	0861_SD004_210414	✓	✓
EB2111116-024	15-Apr-2021 00:00	0861_SD008_210415	✓	✓
EB2111116-025	15-Apr-2021 00:00	0861_SD033_210415	✓	✓
EB2111116-026	19-Apr-2021 00:00	0861_SD064_210419	✓	✓
EB2111116-027	19-Apr-2021 00:00	0861_SD067_210419	✓	✓
EB2111116-028	19-Apr-2021 00:00	0861_SD079_210419	✓	✓
EB2111116-029	19-Apr-2021 00:00	0861_SD080_210419	✓	✓
EB2111116-030	19-Apr-2021 00:00	0861_SD053_210419	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2111116**	Page	: 1 of 15
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: BRISBANE	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 22-Apr-2021 13:55
Order number	: 60612563 3.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 05-May-2021 18:05
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 30		
No. of samples analysed	: 30		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
[redacted]	2IC Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- **SPLIT WORK ORDER: It should be noted that ALS has split this work order over the following work orders (EB2111121, EB2111116) due to the size of the sample numbers. For any further information regarding this processing of samples please contact ALS client services division on ALSEnviro.Brisbane@alsglobal.com**
- EP231X PFAS: Sample "0861_SD048_210412" shows poor duplicate results due to sample heterogeneity. Confirmed by re-extraction and re-analysis.
- EP231X PFAS: The LOR of particular analytes have been raised due to sample matrix interferences.
- EP231X PFAS: Particular samples required dilution due to sample matrix. LOR values have been adjusted accordingly and matrix spike recovery not determined.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SD048_210412	0861_SD005_210412	0861_SD015_210412	0861_SD016_210412	0861_SD018_210412
				Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00
					EB2111116-001	EB2111116-002	EB2111116-003	EB2111116-004	EB2111116-005
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**38.3**	**43.4**	**37.9**	**44.5**	**48.7**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0005	<0.0005	<0.0002	<0.0005	<0.0005
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0005	<0.0005	<0.0002	<0.0005	<0.0005
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0124**	**0.0014**	**0.0003**	<0.0005	<0.0005
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		**0.0028**	<0.0005	<0.0002	<0.0005	<0.0005
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.650**	**0.0201**	**0.0057**	**0.0046**	**0.0104**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		**0.0065**	<0.0038	<0.0006	<0.0014	**0.0287**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.002	<0.002	<0.001	<0.002	<0.002
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0005	<0.0005	<0.0002	<0.0005	<0.0005
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0009**	<0.0005	<0.0002	<0.0005	<0.0005
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0005	<0.0005	<0.0002	<0.0005	<0.0005
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		**0.0007**	<0.0005	<0.0002	<0.0005	<0.0005
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0005	<0.0005	<0.0002	<0.0005	<0.0005
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0005	<0.0005	<0.0002	<0.0005	<0.0005
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		**0.0006**	<0.0005	<0.0002	<0.0005	<0.0005
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		**0.0007**	<0.0005	<0.0002	<0.0005	<0.0005
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		**0.0012**	<0.0005	<0.0002	<0.0005	<0.0005
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		**0.0013**	<0.0013	<0.0005	<0.0012	<0.0013
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		**0.0020**	<0.0005	<0.0002	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0012	<0.0013	<0.0005	<0.0012	<0.0013

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD048_210412	0861_SD005_210412	0861_SD015_210412	0861_SD016_210412	0861_SD018_210412
				Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111116-001	EB2111116-002	EB2111116-003	EB2111116-004	EB2111116-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0012	<0.0013	<0.0005	<0.0012	<0.0013
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0012	<0.0013	<0.0005	<0.0012	<0.0013
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0012	<0.0013	<0.0005	<0.0012	<0.0013
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0005	<0.0005	<0.0002	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0005	<0.0005	<0.0002	<0.0005	<0.0005
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		**0.0024**	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		**0.0023**	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		**0.0008**	<0.0030	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.685**	**0.0215**	**0.0060**	**0.0046**	**0.0391**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.662**	**0.0215**	**0.0060**	**0.0046**	**0.0104**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.669**	**0.0215**	**0.0060**	**0.0046**	**0.0104**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**110**	**120**	**106**	**105**	**95.0**
13C8-PFOA	----	0.0002	%		**90.0**	**100**	**101**	**95.0**	**100**

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0861_SD034_210412	0861_SD020_210412	0861_SD028_210412	0861_SD051_210413	0861_SD099_210413
			Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00
Compound	CAS Number	LOR	Unit	EB2111116-006	EB2111116-007	EB2111116-008	EB2111116-009	EB2111116-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**40.7**	**39.7**	**42.9**	**45.4**	**49.2**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0005**	**0.0008**	**0.0036**	**0.0013**	<0.0005
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0005	**0.0002**	<0.0005
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0318**	**0.0085**	**0.118**	**0.0384**	**0.0077**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0008	**0.0010**	**0.0023**	**0.0020**	**0.0067**
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.002	<0.001	<0.002
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0005	**0.0004**	<0.0005
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	**0.0004**	<0.0005	**0.0004**	<0.0005
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	**0.0005**	**0.0004**	<0.0005	<0.0002	<0.0005
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0005	**0.0005**	<0.0005
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0005	**0.0002**	<0.0005
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0013	<0.0005	<0.0012
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	**0.0003**	<0.0005	**0.0014**	<0.0005
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0013	<0.0005	<0.0012

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD034_210412	0861_SD020_210412	0861_SD028_210412	0861_SD051_210413	0861_SD099_210413
				Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111116-006	EB2111116-007	EB2111116-008	EB2111116-009	EB2111116-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0013	<0.0005	<0.0012
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0013	<0.0005	<0.0012
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0013	<0.0005	<0.0012
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0005	<0.0002	<0.0005
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0005	<0.0002	<0.0005
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0328**	**0.0114**	**0.124**	**0.0448**	**0.0144**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0323**	**0.0093**	**0.122**	**0.0397**	**0.0077**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0328**	**0.0101**	**0.122**	**0.0405**	**0.0077**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**87.5**	**106**	**120**	**116**	**115**
13C8-PFOA	----	0.0002	%		**107**	**108**	**100**	**97.5**	**120**

Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SD100_210413	0861_SD049_210413	0861_SD089_210413	0861_SD052_210413	0861_SD088_210413
				Sampling date / time	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00
					EB2111116-011	EB2111116-012	EB2111116-013	EB2111116-014	EB2111116-015
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**42.1**	**35.7**	**36.3**	**29.4**	**37.0**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	**0.0003**	<0.0005	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	**0.0002**	<0.0005	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	**0.0026**	<0.0005	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	**0.0002**	<0.0005	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0042**	**0.0386**	<0.0005	**0.0002**	<0.0002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0006	<0.0002	<0.0005	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.002	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	**0.0003**	<0.0005	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	**0.0009**	<0.0005	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0005	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	**0.0005**	<0.0005	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0005	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0005	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0005	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0005	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0005	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0005	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD100_210413	0861_SD049_210413	0861_SD089_210413	0861_SD052_210413	0861_SD088_210413
				Sampling date / time	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111116-011	EB2111116-012	EB2111116-013	EB2111116-014	EB2111116-015
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0005	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0005	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0042**	**0.0436**	<0.0005	**0.0002**	<0.0002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0042**	**0.0412**	<0.0005	**0.0002**	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0042**	**0.0432**	<0.0005	**0.0002**	<0.0002
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**118**	**97.5**	**115**	**120**	**104**
13C8-PFOA	----	0.0002	%		**97.0**	**96.5**	**95.0**	**122**	**100**

Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SD091_210414	0861_SD090_210414	0861_SD047_210414	0861_SD050_210414	0861_SD036_210414
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
					EB2111116-016	EB2111116-017	EB2111116-018	EB2111116-019	EB2111116-020
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**45.7**	**45.6**	**49.7**	**44.3**	**46.9**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0005	<0.0005
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0005	<0.0005
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0005	<0.0005
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0005	<0.0005
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0016**	**0.0008**	**0.0034**	**0.0094**	**0.0046**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0005	<0.0038
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.002	<0.001	<0.002	<0.002	<0.002
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0010	<0.0005
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0005	<0.0005
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0005	<0.0005
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0005	<0.0005
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0005	<0.0005
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0005	<0.0005
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0005	<0.0005
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0005	<0.0005
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0005	<0.0005
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0012	<0.0005	<0.0012	<0.0012	<0.0012
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0012	<0.0005	<0.0012	<0.0012	<0.0012

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD091_210414	0861_SD090_210414	0861_SD047_210414	0861_SD050_210414	0861_SD036_210414
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111116-016	EB2111116-017	EB2111116-018	EB2111116-019	EB2111116-020
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0012	<0.0005	<0.0012	<0.0012	<0.0012
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0012	<0.0005	<0.0012	<0.0012	<0.0012
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0012	<0.0005	<0.0012	<0.0012	<0.0012
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0005	<0.0005
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0016**	**0.0008**	**0.0034**	**0.0094**	**0.0046**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0016**	**0.0008**	**0.0034**	**0.0094**	**0.0046**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0016**	**0.0008**	**0.0034**	**0.0094**	**0.0046**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**135**	**102**	**125**	**125**	**100**
13C8-PFOA	----	0.0002	%		**115**	**100**	**100**	**105**	**125**

Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SD094_210414	0861_SD009_210414	0861_SD004_210414	0861_SD008_210415	0861_SD033_210415
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00
					EB2111116-021	EB2111116-022	EB2111116-023	EB2111116-024	EB2111116-025
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**27.4**	**40.9**	**30.1**	**47.1**	**37.4**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	**0.0045**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	**0.0080**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0004**	**0.0003**	**0.0003**	**0.0033**	**0.0884**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	**0.0066**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0061**	**0.0030**	**0.0059**	**0.153**	**0.915**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0110	**0.0070**	**0.0630**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.002	<0.005
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		**0.0002**	<0.0002	<0.0002	<0.0005	**0.0066**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0002**	<0.0002	<0.0002	**0.0006**	**0.0237**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	**0.0054**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	**0.0002**	<0.0002	**0.0006**	**0.0195**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0008**	**0.0019**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0009**	**0.0014**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0014**	**0.0024**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0003	<0.0005	**0.0045**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	**0.0029**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0012	<0.0025
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0008**	**0.0179**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0012	<0.0025

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD094_210414	0861_SD009_210414	0861_SD004_210414	0861_SD008_210415	0861_SD033_210415
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111116-021	EB2111116-022	EB2111116-023	EB2111116-024	EB2111116-025
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0012	<0.0025
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0012	<0.0025
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0012	<0.0025
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	<0.0010
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0005	<0.0010
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0010
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0010
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0010
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0010
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0069**	**0.0035**	**0.0062**	**0.168**	**1.17**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0065**	**0.0033**	**0.0062**	**0.156**	**1.00**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0069**	**0.0035**	**0.0062**	**0.158**	**1.06**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**104**	**128**	**114**	**95.0**	**Not Determined**
13C8-PFOA	----	0.0002	%		**105**	**104**	**102**	**95.0**	**Not Determined**

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0861_SD064_210419	0861_SD067_210419	0861_SD079_210419	0861_SD080_210419	0861_SD053_210419
			Sampling date / time	19-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00
Compound	CAS Number	LOR	Unit	EB2111116-026	EB2111116-027	EB2111116-028	EB2111116-029	EB2111116-030
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**51.6**	**32.3**	**54.7**	**63.0**	**37.4**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0010	**0.0015**	**0.0016**	**0.0063**	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0010	**0.0017**	**0.0023**	**0.0092**	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0070**	**0.0228**	**0.0237**	**0.118**	**0.0012**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0010	**0.0027**	**0.0030**	**0.0156**	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.106**	**0.318**	**0.230**	**0.806**	**0.0077**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0018	**0.0112**	**0.0017**	**0.0111**	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.005	<0.002	<0.005	<0.005	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0010	**0.0008**	**0.0014**	**0.0032**	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0010	**0.0020**	**0.0032**	**0.0123**	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0010	<0.0005	<0.0010	**0.0029**	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0010	**0.0008**	**0.0016**	**0.0090**	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0010	**0.0006**	<0.0010	**0.0052**	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0010	**0.0009**	<0.0010	**0.0103**	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0010	**0.0014**	**0.0012**	**0.0169**	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0010	**0.0027**	**0.0016**	**0.0140**	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0010	**0.0009**	<0.0010	**0.0046**	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0025	<0.0012	<0.0025	**0.0029**	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0010	**0.0043**	<0.0010	**0.0050**	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0025	<0.0012	<0.0025	<0.0024	<0.0005

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD064_210419	0861_SD067_210419	0861_SD079_210419	0861_SD080_210419	0861_SD053_210419
				Sampling date / time	19-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111116-026	EB2111116-027	EB2111116-028	EB2111116-029	EB2111116-030
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0025	<0.0012	<0.0025	<0.0024	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0025	<0.0012	<0.0025	<0.0024	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0025	<0.0012	<0.0025	<0.0024	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0010	<0.0005	<0.0010	<0.0010	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0010	<0.0005	<0.0010	<0.0010	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0010	<0.0005	<0.0010	<0.0010	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0010	<0.0005	<0.0010	<0.0010	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0010	<0.0005	<0.0010	**0.0100**	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0010	<0.0005	<0.0010	**0.0024**	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.113**	**0.372**	**0.271**	**1.06**	**0.0089**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.113**	**0.341**	**0.254**	**0.924**	**0.0089**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.113**	**0.346**	**0.262**	**0.968**	**0.0089**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**135**	**100**	**125**	**90.0**	**121**
13C8-PFOA	----	0.0002	%		**115**	**90.0**	**90.0**	**105**	**104**

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2111116**	Page	: 1 of 11
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: BRISBANE	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 22-Apr-2021
Order number	: 60612563 3.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 05-May-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 30		
No. of samples analysed	: 30		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
[redacted]	2IC Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3643110)									
EB2111116-001	0861_SD048_210412	EA055: Moisture Content	----	0.1	%	38.3	38.8	1.11	0% - 20%
EB2111116-011	0861_SD100_210413	EA055: Moisture Content	----	0.1	%	42.1	44.8	6.29	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3643112)									
EB2111112-011	Anonymous	EA055: Moisture Content	----	0.1	%	38.5	38.2	0.880	0% - 20%
EB2111116-025	0861_SD033_210415	EA055: Moisture Content	----	0.1	%	37.4	40.7	8.39	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3643109)									
EB2111116-001	0861_SD048_210412	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0124	# 0.0045	92.9	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0028	0.0006	124	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.650	# 0.0691	162	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0065	# 0.0018	114	0% - 50%
EB2111116-011	0861_SD100_210413	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0042	0.0041	0.00	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0006	<0.0002	100	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3643111)									
EB2111112-011	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0006	<0.0010	50.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3643111) - continued									
EB2111112-011	Anonymous	EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
EB2111116-025	0861_SD033_210415	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0045	0.0046	3.36	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	0.0080	0.0073	8.48	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0884	0.0753	16.0	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0066	0.0062	5.15	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.915	0.759	18.7	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0630	0.0525	18.1	0% - 20%
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643109)									
EB2111116-001	0861_SD048_210412	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0009	0.0015	48.2	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0007	<0.0005	37.4	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0006	<0.0005	25.9	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0007	<0.0005	37.4	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	0.0012	0.0012	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	0.0013	0.0017	27.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.002	<0.002	0.00	No Limit
EB2111116-011	0861_SD100_210413	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643111)									
EB2111112-011	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643111) - continued									
EB2111112-011	Anonymous	EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.00	No Limit
EB2111116-025	0861_SD033_210415	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0066	0.0059	10.4	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0237	0.0204	14.6	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0054	0.0043	23.1	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0195	0.0158	21.0	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	0.0019	0.0016	18.3	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0014	0.0011	25.1	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0024	0.0019	22.4	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0045	0.0035	24.1	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	0.0029	0.0022	25.1	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0025	<0.0025	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.005	<0.005	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643109)									
EB2111116-001	0861_SD048_210412	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	0.0020	0.0015	23.3	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0012	<0.0012	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0012	<0.0012	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0012	<0.0012	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0012	<0.0012	0.00	No Limit
EB2111116-011	0861_SD100_210413	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643111)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643111) - continued									
EB2111112-011	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EB2111116-025	0861_SD033_210415	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	0.0179	0.0142	23.0	0% - 50%
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0010	<0.0010	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0010	<0.0010	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0025	<0.0025	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0025	<0.0025	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0025	<0.0025	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0025	<0.0025	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643109)									
EB2111116-001	0861_SD048_210412	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	0.0024	0.0011	69.8	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	0.0023	0.0009	87.2	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	0.0008	<0.0005	47.5	No Limit
EB2111116-011	0861_SD100_210413	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643109) - continued									
EB2111116-011	0861_SD100_210413	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643111)									
EB2111112-011	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.00	No Limit
EB2111116-025	0861_SD033_210415	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0010	<0.0010	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0010	<0.0010	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0010	<0.0010	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0010	<0.0010	0.00	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3643109)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	88.6	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	90.2	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	93.6	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	98.3	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	94.0	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	102	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3643111)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	100	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	88.9	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	84.3	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	91.6	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	82.3	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	83.8	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643109)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	84.2	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.8	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.6	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.2	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.4	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.8	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.2	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	100	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.0	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.4	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	94.4	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643111)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	98.7	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	100	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.0	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.6	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	93.6	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.6	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.8	64.0	136

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643111) - continued								
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.4	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	93.6	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643109)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	92.8	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	90.4	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	84.8	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	77.6	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.2	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.8	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643111)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	95.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	98.4	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	92.9	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	93.4	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	101	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.0	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.0	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643109)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	86.8	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	83.9	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	101	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	94.2	54.8	124
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643111)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	95.7	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	93.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	79.2	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	95.4	54.8	124

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3643109)							
EB2111116-002	0861_SD005_210412	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	# Not Determined	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	# Not Determined	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	# Not Determined	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	# Not Determined	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3643111)							
EB2111112-012	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	104	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	88.0	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	80.9	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	85.7	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	63.8	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643109)							
EB2111116-002	0861_SD005_210412	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	# Not Determined	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	# Not Determined	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	# Not Determined	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	# Not Determined	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	# Not Determined	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	# Not Determined	69.0	133

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643109) - continued							
EB2111116-002	0861_SD005_210412	EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	# Not Determined	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	# Not Determined	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	# Not Determined	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	# Not Determined	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643111)							
EB2111112-012	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	100	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	108	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	103	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	102	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	98.0	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	92.0	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	114	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	105	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	78.0	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	131	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	103	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643109)							
EB2111116-002	0861_SD005_210412	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	# Not Determined	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	# Not Determined	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	# Not Determined	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643111)							
EB2111112-012	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	103	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	114	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643111) - continued							
EB2111112-012	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	93.1	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	91.7	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	107	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	77.6	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	71.2	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643109)							
EB2111116-002	0861_SD005_210412	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	# Not Determined	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	# Not Determined	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	# Not Determined	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	# Not Determined	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643111)							
EB2111112-012	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	105	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	97.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	114	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	85.8	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2111116**	Page	: 1 of 7
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 22-Apr-2021
Site	: ----	Issue Date	: 05-May-2021
Sampler	: [redacted]	No. of samples received	: 30
Order number	: 60612563 3.1	No. of samples analysed	: 30

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Duplicate outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2111116--001	0861_SD048_210412	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	92.9 %	0% - 20%	**RPD exceeds LOR based limits**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2111116--001	0861_SD048_210412	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	162 %	0% - 20%	**RPD exceeds LOR based limits**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2111116--001	0861_SD048_210412	**Perfluorodecane sulfonic acid (PFDS)**	335-77-3	114 %	0% - 50%	**RPD exceeds LOR based limits**
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2111116--002	0861_SD005_210412	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2111112--012	Anonymous	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EA055: Moisture Content (Dried @ 105-110°C)						
HDPE Soil Jar						
0861_SD048_210412, 0861_SD005_210412, 0861_SD015_210412, 0861_SD016_210412, 0861_SD018_210412, 0861_SD034_210412, 0861_SD020_210412, 0861_SD028_210412	----	----	----	27-Apr-2021	26-Apr-2021	**1**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) 0861_SD048_210412, 0861_SD005_210412, 0861_SD015_210412, 0861_SD016_210412, 0861_SD018_210412, 0861_SD034_210412, 0861_SD020_210412, 0861_SD028_210412	**12-Apr-2021**	**----**	----	----	**27-Apr-2021**	26-Apr-2021	×
HDPE Soil Jar (EA055) 0861_SD051_210413, 0861_SD099_210413, 0861_SD100_210413, 0861_SD049_210413, 0861_SD089_210413, 0861_SD052_210413, 0861_SD088_210413	**13-Apr-2021**	**----**	----	----	**27-Apr-2021**	27-Apr-2021	✓
HDPE Soil Jar (EA055) 0861_SD091_210414, 0861_SD090_210414, 0861_SD047_210414, 0861_SD050_210414, 0861_SD036_210414, 0861_SD094_210414, 0861_SD009_210414, 0861_SD004_210414	**14-Apr-2021**	**----**	----	----	**27-Apr-2021**	28-Apr-2021	✓
HDPE Soil Jar (EA055) 0861_SD008_210415, 0861_SD033_210415	**15-Apr-2021**	**----**	----	----	**27-Apr-2021**	29-Apr-2021	✓
HDPE Soil Jar (EA055) 0861_SD064_210419, 0861_SD067_210419, 0861_SD079_210419, 0861_SD080_210419, 0861_SD053_210419	**19-Apr-2021**	**----**	----	----	**27-Apr-2021**	03-May-2021	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD048_210412, 0861_SD005_210412, 0861_SD015_210412, 0861_SD016_210412, 0861_SD018_210412, 0861_SD034_210412, 0861_SD020_210412, 0861_SD028_210412	**12-Apr-2021**	**27-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD051_210413, 0861_SD099_210413, 0861_SD100_210413, 0861_SD049_210413, 0861_SD089_210413, 0861_SD052_210413, 0861_SD088_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD091_210414, 0861_SD090_210414, 0861_SD047_210414, 0861_SD050_210414, 0861_SD036_210414, 0861_SD094_210414, 0861_SD009_210414, 0861_SD004_210414	**14-Apr-2021**	**27-Apr-2021**	11-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD008_210415, 0861_SD033_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD064_210419, 0861_SD067_210419, 0861_SD079_210419, 0861_SD080_210419, 0861_SD053_210419	**19-Apr-2021**	**27-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0861_SD048_210412, 0861_SD005_210412, 0861_SD015_210412, 0861_SD016_210412, 0861_SD018_210412, 0861_SD034_210412, 0861_SD020_210412, 0861_SD028_210412	**12-Apr-2021**	**27-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD051_210413, 0861_SD099_210413, 0861_SD100_210413, 0861_SD049_210413, 0861_SD089_210413, 0861_SD052_210413, 0861_SD088_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD091_210414, 0861_SD090_210414, 0861_SD047_210414, 0861_SD050_210414, 0861_SD036_210414, 0861_SD094_210414, 0861_SD009_210414, 0861_SD004_210414	**14-Apr-2021**	**27-Apr-2021**	11-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD008_210415, 0861_SD033_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD064_210419, 0861_SD067_210419, 0861_SD079_210419, 0861_SD080_210419, 0861_SD053_210419	**19-Apr-2021**	**27-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0861_SD048_210412, 0861_SD005_210412, 0861_SD015_210412, 0861_SD016_210412, 0861_SD018_210412, 0861_SD034_210412, 0861_SD020_210412, 0861_SD028_210412	**12-Apr-2021**	**27-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD051_210413, 0861_SD099_210413, 0861_SD100_210413, 0861_SD049_210413, 0861_SD089_210413, 0861_SD052_210413, 0861_SD088_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD091_210414, 0861_SD090_210414, 0861_SD047_210414, 0861_SD050_210414, 0861_SD036_210414, 0861_SD094_210414, 0861_SD009_210414, 0861_SD004_210414	**14-Apr-2021**	**27-Apr-2021**	11-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD008_210415, 0861_SD033_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD064_210419, 0861_SD067_210419, 0861_SD079_210419, 0861_SD080_210419, 0861_SD053_210419	**19-Apr-2021**	**27-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD048_210412, 0861_SD005_210412, 0861_SD015_210412, 0861_SD016_210412, 0861_SD018_210412, 0861_SD034_210412, 0861_SD020_210412, 0861_SD028_210412	**12-Apr-2021**	**27-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD051_210413, 0861_SD099_210413, 0861_SD100_210413, 0861_SD049_210413, 0861_SD089_210413, 0861_SD052_210413, 0861_SD088_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD091_210414, 0861_SD090_210414, 0861_SD047_210414, 0861_SD050_210414, 0861_SD036_210414, 0861_SD094_210414, 0861_SD009_210414, 0861_SD004_210414	**14-Apr-2021**	**27-Apr-2021**	11-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD008_210415, 0861_SD033_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD064_210419, 0861_SD067_210419, 0861_SD079_210419, 0861_SD080_210419, 0861_SD053_210419	**19-Apr-2021**	**27-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0861_SD048_210412, 0861_SD005_210412, 0861_SD015_210412, 0861_SD016_210412, 0861_SD018_210412, 0861_SD034_210412, 0861_SD020_210412, 0861_SD028_210412	**12-Apr-2021**	**27-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD051_210413, 0861_SD099_210413, 0861_SD100_210413, 0861_SD049_210413, 0861_SD089_210413, 0861_SD052_210413, 0861_SD088_210413	**13-Apr-2021**	**27-Apr-2021**	10-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD091_210414, 0861_SD090_210414, 0861_SD047_210414, 0861_SD050_210414, 0861_SD036_210414, 0861_SD094_210414, 0861_SD009_210414, 0861_SD004_210414	**14-Apr-2021**	**27-Apr-2021**	11-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD008_210415, 0861_SD033_210415	**15-Apr-2021**	**27-Apr-2021**	12-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_SD064_210419, 0861_SD067_210419, 0861_SD079_210419, 0861_SD080_210419, 0861_SD053_210419	**19-Apr-2021**	**27-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	06-Jun-2021	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	4	36	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	36	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	36	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2111121**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: BRISBANE	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0861_PFASOMP	Page	: 1 of 5
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 22-Apr-2021 13:55	Issue Date	: 23-Apr-2021
Client Requested Due Date	: 04-May-2021	Scheduled Reporting Date	: **04-May-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 5	Temperature	: 23.3, 21.9, 23.9, 24.1, 4°C
Receipt Detail	: MEDIUM ESKIES	No. of samples received / analysed	: 93 / 93

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **SPLIT WORK ORDER: It should be noted that ALS has split this work order over the following work orders (EB2111116, EB2111121) due to the size of the sample numbers. For any further information regarding this processing of samples please contact ALS client services division on** [redacted]
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2111121-065	19-Apr-2021 00:00	0861_QC146_210419	✓	✓
EB2111121-075	21-Apr-2021 00:00	0861_QC150_210421	✓	✓
EB2111121-076	12-Apr-2021 00:00	0861_QC140_210412	✓	✓
EB2111121-084	14-Apr-2021 00:00	0861_QC143_210414	✓	✓
EB2111121-092	14-Apr-2021 00:00	Trip Blank_1	✓	✓
EB2111121-093	14-Apr-2021 00:00	Trip Blank_2	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2111121-001	12-Apr-2021 00:00	0861_SW005_210412	✓
EB2111121-002	12-Apr-2021 00:00	0861_SW015_210412	✓
EB2111121-003	12-Apr-2021 00:00	0861_SW016_210412	✓
EB2111121-004	12-Apr-2021 00:00	0861_SW018_210412	✓
EB2111121-005	12-Apr-2021 00:00	0861_SW020_210412	✓
EB2111121-006	12-Apr-2021 00:00	0861_SW034_210412	✓
EB2111121-007	12-Apr-2021 00:00	0861_SW028_210412	✓
EB2111121-008	13-Apr-2021 00:00	0861_SW051_210413	✓
EB2111121-009	13-Apr-2021 00:00	0861_SW099_210413	✓
EB2111121-010	13-Apr-2021 00:00	0861_SW100_210413	✓
EB2111121-011	13-Apr-2021 00:00	0861_SW049_210413	✓
EB2111121-012	13-Apr-2021 00:00	0861_SW089_210413	✓
EB2111121-013	13-Apr-2021 00:00	0861_SW052_210413	✓
EB2111121-014	13-Apr-2021 00:00	0861_SW088_210413	✓
EB2111121-015	14-Apr-2021 00:00	0861_SW090_210414	✓
EB2111121-016	14-Apr-2021 00:00	0861_SW091_210414	✓
EB2111121-017	14-Apr-2021 00:00	0861_SW047_210414	✓

			WATER - EP231X PFAS - Full Suite (28 analytes)
EB2111121-018	14-Apr-2021 00:00	0861_SW050_210414	✓
EB2111121-019	14-Apr-2021 00:00	0861_SW036_210414	✓
EB2111121-020	14-Apr-2021 00:00	0861_SW094_210414	✓
EB2111121-021	14-Apr-2021 00:00	0861_SW009_210414	✓
EB2111121-022	14-Apr-2021 00:00	0861_SW004_210414	✓
EB2111121-023	15-Apr-2021 00:00	0861_SW008_210415	✓
EB2111121-024	15-Apr-2021 00:00	0861_SW033_210415	✓
EB2111121-025	19-Apr-2021 00:00	0861_SW064_210419	✓
EB2111121-026	19-Apr-2021 00:00	0861_SW067_210419	✓
EB2111121-027	19-Apr-2021 00:00	0861_SW079_210419	✓
EB2111121-028	19-Apr-2021 00:00	0861_SW080_210419	✓
EB2111121-029	19-Apr-2021 00:00	0861_SW053_210419	✓
EB2111121-030	13-Apr-2021 00:00	0861_MW030_210413	✓
EB2111121-031	13-Apr-2021 00:00	0861_MW031_210413	✓
EB2111121-032	13-Apr-2021 00:00	0861_MW002_210413	✓
EB2111121-033	15-Apr-2021 00:00	0861_MW042_210415	✓
EB2111121-034	15-Apr-2021 00:00	0861_MW043_210415	✓
EB2111121-035	16-Apr-2021 00:00	0861_MW048_210416	✓
EB2111121-036	16-Apr-2021 00:00	0861_MW022_210416	✓
EB2111121-037	16-Apr-2021 00:00	0861_MW055S_210416	✓
EB2111121-038	16-Apr-2021 00:00	0861_MW055D_210416	✓
EB2111121-039	16-Apr-2021 00:00	0861_MW035_210416	✓
EB2111121-040	16-Apr-2021 00:00	0861_MW036_210416	✓
EB2111121-041	16-Apr-2021 00:00	0861_MW028_210416	✓
EB2111121-042	16-Apr-2021 00:00	0861_MW029_210416	✓
EB2111121-043	16-Apr-2021 00:00	0861_MW025_210416	✓
EB2111121-044	19-Apr-2021 00:00	0861_MW007_210419	✓
EB2111121-045	19-Apr-2021 00:00	0861_MW034_210419	✓
EB2111121-046	19-Apr-2021 00:00	0861_MW021_210419	✓
EB2111121-047	20-Apr-2021 00:00	0861_MW024_210420	✓
EB2111121-048	20-Apr-2021 00:00	0861_MW033_210420	✓
EB2111121-049	20-Apr-2021 00:00	0861_MW309_210420	✓
EB2111121-050	20-Apr-2021 00:00	0861_MW012_210420	✓
EB2111121-051	20-Apr-2021 00:00	0861_MW020_210420	✓
EB2111121-052	20-Apr-2021 00:00	0861_MW037_210420	✓
EB2111121-053	20-Apr-2021 00:00	0861_MW047_210420	✓
EB2111121-054	21-Apr-2021 00:00	0861_MW032_210421	✓
EB2111121-055	21-Apr-2021 00:00	0861_MW050_210421	✓
EB2111121-056	21-Apr-2021 00:00	0861_MW005_210421	✓
EB2111121-057	21-Apr-2021 00:00	0861_MW006_210421	✓
EB2111121-058	21-Apr-2021 00:00	0861_MW023_210421	✓

			WATER - EP231X PFAS - Full Suite (28 analytes)
EB2111121-059	20-Apr-2021 00:00	0861_MW046_210421	✓
EB2111121-060	20-Apr-2021 00:00	0861_MW026_210421	✓
EB2111121-061	21-Apr-2021 00:00	0861_MW044_210421	✓
EB2111121-062	16-Apr-2021 00:00	0861_QC334_210416	✓
EB2111121-063	16-Apr-2021 00:00	0861_QC438_210416	✓
EB2111121-064	19-Apr-2021 00:00	0861_QC145_210419	✓
EB2111121-066	19-Apr-2021 00:00	0861_QC147_210419	✓
EB2111121-067	19-Apr-2021 00:00	0861_QC335_210419	✓
EB2111121-068	19-Apr-2021 00:00	0861_QC439_210419	✓
EB2111121-069	20-Apr-2021 00:00	0861_QC148_210420	✓
EB2111121-070	20-Apr-2021 00:00	0861_QC336_210420	✓
EB2111121-071	20-Apr-2021 00:00	0861_QC440_210420	✓
EB2111121-072	21-Apr-2021 00:00	0861_QC149_210421	✓
EB2111121-073	21-Apr-2021 00:00	0861_QC337_210421	✓
EB2111121-074	21-Apr-2021 00:00	0861_QC441_210421	✓
EB2111121-077	12-Apr-2021 00:00	0861_QC141_210412	✓
EB2111121-078	12-Apr-2021 00:00	0861_QC330_210412	✓
EB2111121-079	12-Apr-2021 00:00	0861_QC434_210412	✓
EB2111121-080	12-Apr-2021 00:00	0861_QC511_210412	✓
EB2111121-081	13-Apr-2021 00:00	0861_QC331_210413	✓
EB2111121-082	13-Apr-2021 00:00	0861_QC435_210413	✓
EB2111121-083	14-Apr-2021 00:00	0861_QC142_210414	✓
EB2111121-085	14-Apr-2021 00:00	0861_QC332_210414	✓
EB2111121-086	14-Apr-2021 00:00	0861_QC436_210414	✓
EB2111121-087	15-Apr-2021 00:00	0861_QC144_210415	✓
EB2111121-088	15-Apr-2021 00:00	0861_QC333_210415	✓
EB2111121-089	15-Apr-2021 00:00	0861_QC437_210415	✓
EB2111121-090	21-Apr-2021 00:00	0861_Q151_210421	✓
EB2111121-091	19-Apr-2021 00:00	0861_QC512_210419	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	[redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2111121**	Page	: 1 of 45
Amendment	: **1**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: BRISBANE	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 22-Apr-2021 13:55
Order number	: 60612563 3.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 25-May-2021 10:12
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 93		
No. of samples analysed	: 93		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	Brisbane Organics, Stafford, QLD
	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
	2IC Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X PFAS: The LOR for PFBS has been raised for sample '0861_QC147_210419' due to matrix interference.
- EP231X PFAS: Sample 0861_QC146_210419 shows poor duplicate results due to sample heterogeneity. Confirmed by visual inspection.
- **SPLIT WORK ORDER: It should be noted that ALS has split this work order over the following work orders (EB2111116, EB2111121) due to the size of the sample numbers. For any further information regarding this processing of samples please contact ALS client services division on ALSEnviro.Brisbane@alsglobal.com**
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X PFAS: Samples '0861_MW046_210421' and '0861_QC146_210419' required dilution prior to analysis due to matrix interferences. LOR values have been adjusted accordingly. The LORs for PFHpA and FOSA have been raised further due to matrix interference for sample '0861_QC146_210419'.
- Amendment 1 (25/05/2021): This report has been amended as a result of a request to change sample identification numbers (IDs) received from Camden McCosker on 24/05/21. All analysis results are as per the previous report.
- EP231X PFAS: Particular samples required dilution due to matrix interference. LOR values have been adjusted accordingly and Surrogate recovery has not been determined.
- EP231X PFAS: The LOR of particular analytes for samples '0861_QC147_210419', '0861_MW030_210413' and '0861_MW055S_210416' have been raised due to sample matrix interferences.
- EP231X-INJ PFAS by LCMSMS: Sample '0861_MW044_210421' has been tested to the legacy QSM 5.1 aligned, NATA accredited method due to sample matrix being unsuitable for SPE extraction (high sediment content).
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.
- EP231X-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where only a single sample container is received.

Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_QC146_210419	0861_QC150_210421	0861_QC140_210412	0861_QC143_210414	0861_QC513_210419
				Sampling date / time	19-Apr-2021 00:00	21-Apr-2021 00:00	12-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
					EB2111121-065	EB2111121-075	EB2111121-076	EB2111121-084	EB2111121-092
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**64.9**	**34.7**	**49.3**	**46.9**	**0.1**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		**0.0031**	<0.0002	**0.0007**	<0.0005	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		**0.0038**	<0.0002	**0.0010**	<0.0005	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0688**	<0.0002	**0.0080**	<0.0005	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		**0.0114**	<0.0002	**0.0009**	<0.0005	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.611**	<0.0002	**0.127**	**0.0070**	<0.0002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		**0.0084**	<0.0002	**0.0049**	**0.0644**	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.005	<0.001	<0.002	<0.002	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		**0.0018**	<0.0002	<0.0005	<0.0006	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0063**	<0.0002	**0.0017**	<0.0005	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0012	<0.0002	**0.0006**	<0.0005	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		**0.0046**	<0.0002	**0.0011**	<0.0005	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0010	<0.0002	<0.0005	<0.0005	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		**0.0011**	<0.0002	<0.0005	<0.0005	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		**0.0024**	<0.0002	<0.0005	<0.0005	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		**0.0042**	<0.0002	**0.0014**	<0.0008	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0010	<0.0002	**0.0022**	<0.0005	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0025	<0.0005	**0.0022**	<0.0012	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0014	<0.0002	**0.0026**	<0.0005	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0025	<0.0005	<0.0012	<0.0012	<0.0005

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_QC146_210419	0861_QC150_210421	0861_QC140_210412	0861_QC143_210414	0861_QC513_210419
				Sampling date / time	19-Apr-2021 00:00	21-Apr-2021 00:00	12-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-065	EB2111121-075	EB2111121-076	EB2111121-084	EB2111121-092
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0025	<0.0005	<0.0012	<0.0012	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0025	<0.0005	<0.0012	<0.0012	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0025	<0.0005	<0.0012	<0.0012	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0010	<0.0002	<0.0005	<0.0005	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0010	<0.0002	<0.0005	<0.0005	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0010	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0010	<0.0005	**0.0042**	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0010	<0.0005	**0.0009**	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0010	<0.0005	**0.0006**	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.727**	<0.0002	**0.160**	**0.0714**	<0.0002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.680**	<0.0002	**0.135**	**0.0070**	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.696**	<0.0002	**0.144**	**0.0070**	<0.0002
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**100**	**115**	**100**	**Not Determined**	**102**
13C8-PFOA	----	0.0002	%		**90.0**	**119**	**90.0**	**Not Determined**	**96.5**

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_QC514_210419	----	----	----	----
				Sampling date / time	14-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2111121-093	--------	--------	--------	--------
					Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		<0.1	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	----	----	----	----

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_QC514_210419	----	----	----	----
				Sampling date / time	14-Apr-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2111121-093	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**98.0**	----	----	----	----
13C8-PFOA	----	0.0002	%		**98.0**	----	----	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW005_210412	0861_SW015_210412	0861_SW016_210412	0861_SW018_210412	0861_SW020_210412
				Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00
					EB2111121-001	EB2111121-002	EB2111121-003	EB2111121-004	EB2111121-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	**0.02**	**0.02**	<0.02	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.05**	**0.03**	**0.04**	**0.02**	**0.02**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW005_210412	0861_SW015_210412	0861_SW016_210412	0861_SW018_210412	0861_SW020_210412
				Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-001	EB2111121-002	EB2111121-003	EB2111121-004	EB2111121-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.05**	**0.05**	**0.06**	**0.02**	**0.02**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.05**	**0.05**	**0.06**	**0.02**	**0.02**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.05**	**0.05**	**0.06**	**0.02**	**0.02**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**117**	**119**	**113**	**117**	**116**
13C8-PFOA	----	0.02	%		**102**	**100**	**102**	**102**	**102**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW034_210412	0861_SW028_210412	0861_SW051_210413	0861_SW099_210413	0861_SW100_210413
				Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00
					EB2111121-006	EB2111121-007	EB2111121-008	EB2111121-009	EB2111121-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.07**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.04**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	**0.31**	<0.02	**0.02**	**0.02**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	**0.45**	**0.04**	**0.06**	**0.04**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.03**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.04**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.01**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW034_210412	0861_SW028_210412	0861_SW051_210413	0861_SW099_210413	0861_SW100_210413
				Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-006	EB2111121-007	EB2111121-008	EB2111121-009	EB2111121-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.20**	**0.48**	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.22**	**1.43**	**0.04**	**0.08**	**0.06**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.02**	**0.76**	**0.04**	**0.08**	**0.06**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.22**	**1.39**	**0.04**	**0.08**	**0.06**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**127**	**121**	**114**	**105**	**104**
13C8-PFOA	----	0.02	%		**102**	**102**	**103**	**105**	**103**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW049_210413	0861_SW089_210413	0861_SW052_210413	0861_SW088_210413	0861_SW090_210414
				Sampling date / time	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	14-Apr-2021 00:00
					EB2111121-011	EB2111121-012	EB2111121-013	EB2111121-014	EB2111121-015
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.34**	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.35**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**1.89**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.09**	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**2.73**	<0.01	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.3**	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.37**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.73**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.15**	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.30**	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW049_210413	0861_SW089_210413	0861_SW052_210413	0861_SW088_210413	0861_SW090_210414
				Sampling date / time	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	14-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-011	EB2111121-012	EB2111121-013	EB2111121-014	EB2111121-015
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**7.25**	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**4.62**	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**6.81**	<0.01	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**106**	**89.7**	**107**	**116**	**105**
13C8-PFOA	----	0.02	%		**105**	**101**	**106**	**108**	**105**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW091_210414	0861_SW047_210414	0861_SW050_210414	0861_SW036_210414	0861_SW094_210414
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
					EB2111121-016	EB2111121-017	EB2111121-018	EB2111121-019	EB2111121-020
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.11**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.12**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.65**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.03**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	**0.02**	**0.01**	**0.82**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	**0.2**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.36**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.30**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.11**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.10**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW091_210414	0861_SW047_210414	0861_SW050_210414	0861_SW036_210414	0861_SW094_210414
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00	14-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-016	EB2111121-017	EB2111121-018	EB2111121-019	EB2111121-020
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	**0.02**	**0.01**	**2.80**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	**0.02**	**0.01**	**1.47**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	**0.02**	**0.01**	**2.65**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**104**	**107**	**112**	**108**
13C8-PFOA	----	0.02	%		**99.8**	**103**	**102**	**101**	**106**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW009_210414	0861_SW004_210414	0861_SW008_210415	0861_SW033_210415	0861_SW064_210419
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	19-Apr-2021 00:00
					EB2111121-021	EB2111121-022	EB2111121-023	EB2111121-024	EB2111121-025
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.04**	**6.82**	**0.32**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**0.03**	**8.00**	**0.19**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**0.02**	**0.04**	**0.16**	**44.2**	**0.84**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	**1.52**	**0.03**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.04**	**0.06**	**0.37**	**63.8**	**0.87**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	**0.66**	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	**3.2**	**0.2**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**0.02**	**6.11**	**0.14**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.02**	**0.03**	**23.3**	**0.27**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	**3.35**	**0.02**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.02**	**7.70**	**0.04**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	**0.16**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	**0.14**	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW009_210414	0861_SW004_210414	0861_SW008_210415	0861_SW033_210415	0861_SW064_210419
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	19-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-021	EB2111121-022	EB2111121-023	EB2111121-024	EB2111121-025
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.06**	**0.12**	**0.67**	**169**	**2.92**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.06**	**0.10**	**0.53**	**108**	**1.71**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.06**	**0.12**	**0.64**	**158**	**2.70**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**110**	**106**	**114**	**96.4**	**98.3**
13C8-PFOA	----	0.02	%		**99.7**	**100**	**103**	**95.5**	**106**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW067_210419	0861_SW079_210419	0861_SW080_210419	0861_SW053_210419	0861_MW030_210413
				Sampling date / time	19-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00	13-Apr-2021 00:00
					EB2111121-026	EB2111121-027	EB2111121-028	EB2111121-029	EB2111121-030
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**2.63**	**1.90**	**3.46**	<0.02	**1.45**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**2.46**	**3.26**	**3.62**	<0.02	**1.10**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**15.6**	**13.7**	**26.0**	**0.04**	**2.96**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.88**	**1.02**	**1.60**	<0.02	**0.05**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**17.3**	**12.8**	**29.9**	**0.10**	<0.06
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		**0.07**	**0.10**	<0.05	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**1.6**	**0.4**	**0.8**	<0.1	**0.4**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**1.93**	**1.06**	**1.44**	<0.02	**0.61**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**3.35**	**3.59**	**6.20**	<0.02	**2.84**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.36**	**0.60**	**0.88**	<0.02	**0.46**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.54**	**0.89**	**1.50**	<0.01	**0.31**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.06**	<0.02	<0.05	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		**0.03**	<0.02	<0.05	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	**0.02**	<0.05	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW067_210419	0861_SW079_210419	0861_SW080_210419	0861_SW053_210419	0861_MW030_210413
				Sampling date / time	19-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00	13-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-026	EB2111121-027	EB2111121-028	EB2111121-029	EB2111121-030
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**0.08**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**46.8**	**39.3**	**75.4**	**0.14**	**10.3**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**32.9**	**26.5**	**55.9**	**0.14**	**2.96**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**43.3**	**34.9**	**70.2**	**0.14**	**9.11**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**106**	**118**	**112**	**91.9**	**96.7**
13C8-PFOA	----	0.02	%		**104**	**103**	**98.7**	**98.9**	**102**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW031_210413	0861_MW002_210413	0861_MW042_210415	0861_MW043_210415	0861_MW048_210416
				Sampling date / time	13-Apr-2021 00:00	13-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	16-Apr-2021 00:00
					EB2111121-031	EB2111121-032	EB2111121-033	EB2111121-034	EB2111121-035
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.47**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.47**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**3.22**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.14**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	**0.02**	<0.01	**0.01**	**4.77**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	**0.1**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.18**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.60**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.09**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.15**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW031_210413	0861_MW002_210413	0861_MW042_210415	0861_MW043_210415	0861_MW048_210416
				Sampling date / time	13-Apr-2021 00:00	13-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	16-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-031	EB2111121-032	EB2111121-033	EB2111121-034	EB2111121-035
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.02**	**0.02**	<0.01	**0.01**	**10.2**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.02**	**0.02**	<0.01	**0.01**	**7.99**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.02**	**0.02**	<0.01	**0.01**	**9.58**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**97.5**	**100**	**102**	**97.3**
13C8-PFOA	----	0.02	%		**94.6**	**98.2**	**98.4**	**96.6**	**101**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW022_210416	0861_MW055S_210416	0861_MW055D_210416	0861_MW035_210416	0861_MW036_210416
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00
					EB2111121-036	EB2111121-037	EB2111121-038	EB2111121-039	EB2111121-040
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.26**	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.92**	**0.07**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**16.3**	**0.41**	<0.02	<0.02	**0.04**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.32**	**0.03**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.83**	**0.40**	<0.01	<0.01	**0.02**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.4**	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.26**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.26**	<0.05	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.24**	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.56**	<0.02	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW022_210416	0861_MW055S_210416	0861_MW055D_210416	0861_MW035_210416	0861_MW036_210416
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00
					EB2111121-036	EB2111121-037	EB2111121-038	EB2111121-039	EB2111121-040
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	**0.19**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**24.4**	**0.91**	**0.19**	<0.01	**0.06**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**18.1**	**0.81**	<0.01	<0.01	**0.06**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**22.1**	**0.81**	**0.19**	<0.01	**0.06**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**100**	**92.1**	**92.6**	**95.6**	**99.8**
13C8-PFOA	----	0.02	%		**96.9**	**93.6**	**98.6**	**98.5**	**96.3**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW028_210416	0861_MW029_210416	0861_MW025_210416	0861_MW007_210419	0861_MW034_210419
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00
					EB2111121-041	EB2111121-042	EB2111121-043	EB2111121-044	EB2111121-045
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**3.49**	**0.55**	**0.14**	**2.00**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**3.72**	**0.68**	**0.12**	**2.87**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**25.3**	**3.98**	**0.58**	**15.6**	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**2.54**	**0.30**	**0.02**	**1.83**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**41.2**	**4.29**	**0.37**	**32.8**	**0.59**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.08	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.9**	**0.1**	<0.1	**0.5**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**1.10**	**0.15**	**0.05**	**0.80**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**5.45**	**0.71**	**0.12**	**3.71**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**1.00**	**0.12**	**0.02**	**0.57**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**1.98**	**0.20**	**0.03**	**1.26**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.08	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.08	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.08	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.08	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.08	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.21	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.08	<0.02	<0.02	**0.53**	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.21	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.21	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW028_210416	0861_MW029_210416	0861_MW025_210416	0861_MW007_210419	0861_MW034_210419
				Sampling date / time	16-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-041	EB2111121-042	EB2111121-043	EB2111121-044	EB2111121-045
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.21	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.21	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.08	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.08	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.08	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.08	<0.05	<0.05	**0.14**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.08	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.08	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**86.7**	**11.1**	**1.45**	**62.6**	**0.59**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**66.5**	**8.27**	**0.95**	**48.4**	**0.59**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**80.4**	**10.1**	**1.31**	**57.4**	**0.59**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**104**	**95.6**	**95.9**	**75.3**	**96.8**
13C8-PFOA	----	0.02	%		**104**	**97.2**	**102**	**92.9**	**98.4**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW021_210419	0861_MW024_210420	0861_MW033_210420	0861_MW309_210420	0861_MW012_210420
				Sampling date / time	19-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00
					EB2111121-046	EB2111121-047	EB2111121-048	EB2111121-049	EB2111121-050
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.19**	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**2.52**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**19.5**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**1.70**	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**61.8**	**0.04**	<0.01	<0.01	**0.01**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.3**	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.57**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**2.82**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.68**	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**2.19**	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.07**	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW021_210419	0861_MW024_210420	0861_MW033_210420	0861_MW309_210420	0861_MW012_210420
				Sampling date / time	19-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-046	EB2111121-047	EB2111121-048	EB2111121-049	EB2111121-050
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.08**	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**93.4**	**0.04**	<0.01	<0.01	**0.01**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**81.3**	**0.04**	<0.01	<0.01	**0.01**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**89.1**	**0.04**	<0.01	<0.01	**0.01**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**94.0**	**94.0**	**98.0**	**111**	**98.8**
13C8-PFOA	----	0.02	%		**93.4**	**97.8**	**106**	**99.9**	**100**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW020_210420	0861_MW037_210420	0861_MW047_210420	0861_MW032_210421	0861_MW050_210421
				Sampling date / time	20-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	21-Apr-2021 00:00	21-Apr-2021 00:00
					EB2111121-051	EB2111121-052	EB2111121-053	EB2111121-054	EB2111121-055
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.10**	**1.38**	**0.22**	**1.72**	**0.03**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**2.02**	**1.46**	**0.19**	**1.85**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**10.6**	**3.57**	**0.18**	**8.64**	**0.07**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**1.70**	<0.02	**0.08**	**0.93**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**30.3**	**0.06**	**2.46**	**23.2**	**0.23**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	**0.03**	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.5**	<0.1	**0.2**	**0.5**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**2.07**	**0.18**	**0.19**	**0.80**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**3.29**	**0.90**	**0.24**	**3.88**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**1.20**	**0.12**	<0.02	**1.04**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**2.07**	**0.03**	**0.04**	**2.13**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.18**	<0.02	<0.02	**0.07**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW020_210420	0861_MW037_210420	0861_MW047_210420	0861_MW032_210421	0861_MW050_210421
				Sampling date / time	20-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	21-Apr-2021 00:00	21-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-051	EB2111121-052	EB2111121-053	EB2111121-054	EB2111121-055
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.34**	<0.05	<0.05	**0.08**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**55.4**	**7.70**	**3.80**	**44.9**	**0.33**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**40.9**	**3.63**	**2.64**	**31.8**	**0.30**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**51.5**	**6.24**	**3.53**	**42.0**	**0.33**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**112**	**108**	**104**	**108**	**93.3**
13C8-PFOA	----	0.02	%		**100**	**102**	**105**	**98.4**	**103**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW005_210421	0861_MW006_210421	0861_MW023_210421	0861_MW046_210421	0861_MW026_210421
				Sampling date / time	21-Apr-2021 00:00	21-Apr-2021 00:00	21-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00
					EB2111121-056	EB2111121-057	EB2111121-058	EB2111121-059	EB2111121-060
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**1.16**	**0.10**	**18.5**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**1.63**	**0.13**	**29.1**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**0.04**	**7.67**	**0.84**	**127**	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.99**	**0.02**	**13.6**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	**47.4**	**0.31**	**293**	**0.02**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**0.6**	<0.1	**14.7**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**1.80**	**0.03**	**39.5**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**3.42**	**0.07**	**69.7**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.76**	<0.02	**18.9**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**1.07**	**0.01**	**40.3**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	**0.07**	<0.02	**0.72**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	**0.09**	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	**0.35**	<0.02	<0.05	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW005_210421	0861_MW006_210421	0861_MW023_210421	0861_MW046_210421	0861_MW026_210421
				Sampling date / time	21-Apr-2021 00:00	21-Apr-2021 00:00	21-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-056	EB2111121-057	EB2111121-058	EB2111121-059	EB2111121-060
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	**0.09**	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	**0.36**	<0.05	**38.5**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	**0.06**	<0.05	**2.98**	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.06**	**67.3**	**1.51**	**707**	**0.02**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.06**	**55.1**	**1.15**	**420**	**0.02**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.06**	**64.3**	**1.36**	**663**	**0.02**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**102**	**102**	**107**	**104**	**105**
13C8-PFOA	----	0.02	%		**102**	**98.3**	**102**	**96.0**	**100**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW044_210421	0861_QC334_210416	0861_QC438_210416	0861_QC145_210419	0861_QC147_210419
				Sampling date / time	21-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00
					EB2111121-061	EB2111121-062	EB2111121-063	EB2111121-064	EB2111121-066
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	<0.02	<0.02	**1.81**	<0.03
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	<0.02	<0.02	**2.68**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		----	<0.02	<0.02	**13.2**	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	<0.02	<0.02	**0.76**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	<0.01	<0.01	**10.1**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		<0.10	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW044_210421	0861_QC334_210416	0861_QC438_210416	0861_QC145_210419	0861_QC147_210419
				Sampling date / time	21-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-061	EB2111121-062	EB2111121-063	EB2111121-064	EB2111121-066
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		----	<0.1	<0.1	**0.4**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	<0.02	<0.02	**0.93**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	<0.02	<0.02	**3.24**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	<0.02	<0.02	**0.54**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	<0.01	<0.01	**0.85**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW044_210421	0861_QC334_210416	0861_QC438_210416	0861_QC145_210419	0861_QC147_210419
				Sampling date / time	21-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-061	EB2111121-062	EB2111121-063	EB2111121-064	EB2111121-066
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		----	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		----	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		----	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW044_210421	0861_QC334_210416	0861_QC438_210416	0861_QC145_210419	0861_QC147_210419
				Sampling date / time	21-Apr-2021 00:00	16-Apr-2021 00:00	16-Apr-2021 00:00	19-Apr-2021 00:00	19-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-061	EB2111121-062	EB2111121-063	EB2111121-064	EB2111121-066
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	----	----	----
Sum of PFAS	----	0.01	µg/L		----	<0.01	<0.01	**34.5**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		----	<0.01	<0.01	**23.3**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		----	<0.01	<0.01	**31.1**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		----	**109**	**114**	**112**	**108**
13C4-PFOS	----	0.02	%		**97.8**	----	----	----	----
13C8-PFOA	----	0.02	%		----	**99.9**	**101**	**104**	**93.5**
13C8-PFOA	----	0.02	%		**90.3**	----	----	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_QC335_210419	0861_QC439_210419	0861_QC148_210420	0861_QC336_210420	0861_QC440_210420
				Sampling date / time	19-Apr-2021 00:00	19-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00
					EB2111121-067	EB2111121-068	EB2111121-069	EB2111121-070	EB2111121-071
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.07**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**0.04**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	<0.02	**0.20**	<0.02	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	**0.44**	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**0.03**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**0.04**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC335_210419	0861_QC439_210419	0861_QC148_210420	0861_QC336_210420	0861_QC440_210420
				Sampling date / time	19-Apr-2021 00:00	19-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00	20-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-067	EB2111121-068	EB2111121-069	EB2111121-070	EB2111121-071
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	**0.82**	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	**0.64**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	**0.78**	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**110**	**105**	**106**	**103**	**107**
13C8-PFOA	----	0.02	%		**98.5**	**102**	**102**	**103**	**100**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_QC149_210421	0861_QC337_210421	0861_QC441_210421	0861_QC141_210412	0861_QC330_210412
				Sampling date / time	21-Apr-2021 00:00	21-Apr-2021 00:00	21-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00
					EB2111121-072	EB2111121-073	EB2111121-074	EB2111121-077	EB2111121-078
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.82**	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.79**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		**8.50**	<0.02	<0.02	**0.02**	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.98**	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**22.8**	<0.01	<0.01	**0.03**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.6**	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.83**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**3.40**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**1.08**	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**2.20**	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.06**	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC149_210421	0861_QC337_210421	0861_QC441_210421	0861_QC141_210412	0861_QC330_210412
				Sampling date / time	21-Apr-2021 00:00	21-Apr-2021 00:00	21-Apr-2021 00:00	12-Apr-2021 00:00	12-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-072	EB2111121-073	EB2111121-074	EB2111121-077	EB2111121-078
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.09**	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**44.2**	<0.01	<0.01	**0.05**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**31.3**	<0.01	<0.01	**0.05**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**41.3**	<0.01	<0.01	**0.05**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**106**	**106**	**97.6**	**107**
13C8-PFOA	----	0.02	%		**89.4**	**100**	**100**	**97.8**	**97.2**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_QC434_210412	0861_QC511_210412	0861_QC331_210413	0861_QC435_210413	0861_QC142_210414
				Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	14-Apr-2021 00:00
					EB2111121-079	EB2111121-080	EB2111121-081	EB2111121-082	EB2111121-083
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.02**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC434_210412	0861_QC511_210412	0861_QC331_210413	0861_QC435_210413	0861_QC142_210414
				Sampling date / time	12-Apr-2021 00:00	12-Apr-2021 00:00	13-Apr-2021 00:00	13-Apr-2021 00:00	14-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-079	EB2111121-080	EB2111121-081	EB2111121-082	EB2111121-083
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.02**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.02**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.02**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	**97.3**	**103**	**93.0**	**104**
13C8-PFOA	----	0.02	%		**101**	**97.1**	**102**	**94.8**	**99.5**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_QC332_210414	0861_QC436_210414	0861_QC144_210415	0861_QC333_210415	0861_QC437_210415
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00
					EB2111121-085	EB2111121-086	EB2111121-087	EB2111121-088	EB2111121-089
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC332_210414	0861_QC436_210414	0861_QC144_210415	0861_QC333_210415	0861_QC437_210415
				Sampling date / time	14-Apr-2021 00:00	14-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00	15-Apr-2021 00:00
Compound	CAS Number	LOR	Unit		EB2111121-085	EB2111121-086	EB2111121-087	EB2111121-088	EB2111121-089
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**96.1**	**114**	**90.7**	**98.0**
13C8-PFOA	----	0.02	%		**102**	**96.3**	**105**	**97.0**	**96.7**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC151_210421	0861_QC512_210419	----	----	----
				Sampling date / time	21-Apr-2021 00:00	19-Apr-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2111121-090	EB2111121-091	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC151_210421	0861_QC512_210419	----	----	----
				Sampling date / time	21-Apr-2021 00:00	19-Apr-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2111121-090	EB2111121-091	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**98.0**	**96.0**	----	----	----
13C8-PFOA	----	0.02	%		**99.0**	**94.2**	----	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2111121**	Page	: 1 of 23
Amendment	: **1**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: BRISBANE	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 22-Apr-2021
Order number	: 60612563 3.1	Date Analysis Commenced	: 27-Apr-2021
C-O-C number	: ----	Issue Date	: 25-May-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 93		
No. of samples analysed	: 93		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	Brisbane Organics, Stafford, QLD
	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
	2IC Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3643189)									
EB2111121-065	0861_QC146_210419	EA055: Moisture Content	----	0.1	%	64.9	64.9	0.00	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3643188)									
EB2111121-065	0861_QC146_210419	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0031	0.0030	4.70	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	0.0038	0.0044	13.7	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0688	0.0834	19.2	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0114	0.0154	29.4	0% - 50%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.611	# 0.793	26.0	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0084	0.0066	24.3	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3643188)									
EB2111121-065	0861_QC146_210419	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0018	0.0013	36.4	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0063	0.0062	2.30	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0012	0.0014	16.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0046	0.0066	35.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0010	<0.0010	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0011	0.0014	22.2	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0024	0.0028	16.2	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0042	0.0035	18.2	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0010	<0.0010	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0025	<0.0025	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.005	<0.005	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643188)									
EB2111121-065	0861_QC146_210419	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0014	0.0020	33.9	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0010	<0.0010	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3643188) - continued									
EB2111121-065	0861_QC146_210419	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0010	<0.0010	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0025	<0.0025	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0025	<0.0025	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0025	<0.0025	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0025	<0.0025	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3643188)									
EB2111121-065	0861_QC146_210419	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0010	<0.0010	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0010	<0.0010	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0010	<0.0010	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0010	<0.0010	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3647035)									
EB2111121-064	0861_QC145_210419	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	10.1	9.68	4.12	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	1.81	1.78	1.60	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	2.68	3.03	12.2	0% - 20%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	13.2	13.0	1.77	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.76	0.84	9.92	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EB2111121-069	0861_QC148_210420	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.44	0.37	18.2	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.07	0.06	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.04	0.05	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.20	0.19	0.00	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3653347)									
EB2111121-061	0861_MW044_210421	EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3653347) - continued									
EB2111121-061	0861_MW044_210421	EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3656281)									
EB2111121-072	0861_QC149_210421	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	22.8	23.0	1.28	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	1.82	1.82	0.00	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	1.79	1.75	2.04	0% - 20%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	8.50	9.04	6.14	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.98	0.94	4.64	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3656282)									
EB2111121-083	0861_QC142_210414	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.02	0.05	97.7	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.03	40.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3647035)									
EB2111121-064	0861_QC145_210419	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.85	0.84	0.00	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.93	1.00	6.76	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	3.24	3.53	8.68	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.54	0.56	5.29	0% - 20%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.4	0.4	0.00	No Limit
EB2111121-069	0861_QC148_210420	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.03	0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.04	0.04	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3647035) - continued									
EB2111121-069	0861_QC148_210420	EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3653347)									
EB2111121-061	0861_MW044_210421	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	<0.10	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3656281)									
EB2111121-072	0861_QC149_210421	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	2.20	2.36	6.88	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.83	0.86	2.76	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	3.40	3.55	4.27	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	1.08	1.13	4.41	0% - 20%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	0.06	0.07	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.6	0.6	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3656282)									
EB2111121-083	0861_QC142_210414	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3656282) - continued									
EB2111121-083	0861_QC142_210414	EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3647035)									
EB2111121-064	0861_QC145_210419	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EB2111121-069	0861_QC148_210420	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3653347)									
EB2111121-061	0861_MW044_210421	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3653347) - continued									
EB2111121-061	0861_MW044_210421	EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3656281)									
EB2111121-072	0861_QC149_210421	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3656282)									
EB2111121-083	0861_QC142_210414	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3647035)									
EB2111121-064	0861_QC145_210419	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3647035) - continued									
EB2111121-069	0861_QC148_210420	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3653347)									
EB2111121-061	0861_MW044_210421	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3656281)									
EB2111121-072	0861_QC149_210421	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.09	0.14	49.2	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3656282)									
EB2111121-083	0861_QC142_210414	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3647035)									
EB2111121-064	0861_QC145_210419	EP231X: Sum of PFAS	----	0.01	µg/L	34.5	34.7	0.434	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	23.3	22.7	2.70	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	31.1	30.8	0.905	0% - 20%

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231P: PFAS Sums (QC Lot: 3647035) - continued									
EB2111121-069	0861_QC148_210420	EP231X: Sum of PFAS	----	0.01	µg/L	0.82	0.73	11.6	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.64	0.56	13.3	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.78	0.68	13.7	0% - 20%
EP231P: PFAS Sums (QC Lot: 3653347)									
EB2111121-061	0861_MW044_210421	EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 3656281)									
EB2111121-072	0861_QC149_210421	EP231X: Sum of PFAS	----	0.01	µg/L	44.2	45.3	2.48	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	31.3	32.0	2.34	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	41.3	42.5	2.82	0% - 20%
EP231P: PFAS Sums (QC Lot: 3656282)									
EB2111121-083	0861_QC142_210414	EP231X: Sum of PFAS	----	0.01	µg/L	0.02	0.05	85.7	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.02	0.05	85.7	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.02	0.05	85.7	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3643188)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	93.6	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	81.6	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	86.0	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	85.7	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	91.4	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	91.7	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643188)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	84.1	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.6	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.4	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.2	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.6	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.8	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.2	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	111	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.8	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	110	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	100	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643188)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	93.1	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	85.2	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	86.2	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	86.5	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.8	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.4	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643188)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	87.6	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	88.6	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	92.1	65.0	137

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643188) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	88.3	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3647031)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	107	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	110	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	92.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	86.1	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	103	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	102	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3647032)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	112	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	125	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	110	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	107	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	118	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	128	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3647033)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	107	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	108	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	102	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	105	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	102	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	104	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3647035)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	108	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	119	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	99.4	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	116	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	128	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	125	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3653347)								
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.444 µg/L	78.4	72.0	130
EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.47 µg/L	84.9	71.0	127
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.475 µg/L	89.0	68.0	131
EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.477 µg/L	88.0	69.0	134
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.4646 µg/L	90.4	65.0	140

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3653347) - continued								
EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	79.8	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3656281)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	117	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	120	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	112	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	102	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	125	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	113	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3656282)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	119	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	122	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.2373 µg/L	124	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	122	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	123	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	118	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3647031)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	113	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	118	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	110	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	114	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	110	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	109	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	112	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	96.0	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	97.0	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	100	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	110	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3647032)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	96.5	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	113	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	119	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	113	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	109	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	105	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	114	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	117	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	105	65.0	144

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3647032) - continued								
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	105	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3647033)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	97.9	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	96.4	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	93.8	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	95.0	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	90.2	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	90.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	117	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	106	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	98.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	100	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3647035)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	95.6	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	109	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	104	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	110	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	99.2	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	103	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	109	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	106	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	93.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	110	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3653347)								
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	91.6	73.0	129
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	93.6	72.0	129
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	87.2	72.0	129
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	93.8	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	88.6	71.0	133
EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	93.0	69.0	130
EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	94.8	71.0	129
EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	80.2	69.0	133
EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	86.4	72.0	134
EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	88.6	65.0	144
EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	84.9	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3656281)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3656281) - continued								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	108	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	120	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	113	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	121	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	117	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	117	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	105	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	119	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	112	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	116	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	116	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3656282)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	96.9	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	122	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	106	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	127	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	118	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	107	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	121	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	113	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	94.4	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	117	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3647031)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	105	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	132	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	114	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	112	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	123	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	82.0	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	97.0	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3647032)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	101	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	106	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	99.0	60.5	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3647032) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	113	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	114	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	112	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	120	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3647033)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	93.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	104	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	96.5	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	105	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	91.8	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	90.4	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	90.4	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3647035)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	89.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	97.1	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	103	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	119	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	111	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	116	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	110	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3653347)								
EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	86.0	67.0	137
EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	94.1	68.0	141
EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	92.1	62.1	136
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	86.8	65.2	135

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3653347) - continued								
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	94.6	63.2	135
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	79.6	65.0	136
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	72.0	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3656281)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	117	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	109	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	118	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	108	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	107	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	107	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	119	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3656282)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	111	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	96.9	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	126	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	116	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	128	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	119	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	110	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3647031)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	100	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	110	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	103	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	99.2	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3647032)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	114	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	113	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	137	67.0	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3647032) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	119	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3647033)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	99.0	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	100	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	107	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	108	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3647035)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	108	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	102	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	119	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	116	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3653347)								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.469 µg/L	84.4	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.476 µg/L	93.3	64.0	140
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.48 µg/L	101	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.483 µg/L	88.4	62.2	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3656281)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	111	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	123	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	114	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	105	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3656282)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	112	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	102	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	112	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	100	64.2	133
EP231P: PFAS Sums (QCLot: 3647031)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 3647032)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 3647033)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231P: PFAS Sums (QCLot: 3647033) - continued								
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 3647035)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 3653347)								
EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 3656281)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 3656282)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3643188)							
EB2111121-075	0861_QC150_210421	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	83.6	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	83.8	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	83.0	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	87.8	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	85.4	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	81.7	59.0	134

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3643188)							
EB2111121-075	0861_QC150_210421	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	82.7	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	87.6	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	78.4	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	88.4	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	90.4	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	92.4	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	86.0	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	93.6	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	110	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	98.4	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	89.6	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3643188)							
EB2111121-075	0861_QC150_210421	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	84.4	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	86.4	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	86.4	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	81.2	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	92.1	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	86.8	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	79.6	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3643188)							
EB2111121-075	0861_QC150_210421	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	90.6	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	80.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	89.6	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	71.7	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3647035)							
EB2111121-066	0861_QC147_210419	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	92.2	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	101	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	97.8	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	103	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	101	65.0	140

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3647035) - continued							
EB2111121-066	0861_QC147_210419	EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	130	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3653347)							
EB2111227-001	Anonymous	EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.443 µg/L	99.8	70.0	130
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.47 µg/L	85.1	70.0	130
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.475 µg/L	84.2	70.0	130
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.477 µg/L	85.1	70.0	130
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	78.2	70.0	130
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.482 µg/L	91.7	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3656281)							
EB2111121-087	0861_QC144_210415	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	124	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	120	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	114	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	105	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	125	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	116	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3656282)							
EB2111121-090	QC151_210421	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	110	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	125	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	116	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	102	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	113	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	114	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3647035)							
EB2111121-066	0861_QC147_210419	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	96.4	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	103	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	104	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	102	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	93.8	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	98.8	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	96.6	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	110	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	98.6	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	88.8	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	91.8	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3653347)							
EB2111227-001	Anonymous	EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	87.2	70.0	130
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	81.6	70.0	130
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	84.2	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3653347) - continued							
EB2111227-001	Anonymous	EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	83.8	70.0	130
		EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	80.6	70.0	130
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	82.0	70.0	130
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	84.2	70.0	130
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	81.8	70.0	130
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	80.0	70.0	130
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	81.6	70.0	130
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	85.4	70.0	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3656281)							
EB2111121-087	0861_QC144_210415	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	108	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	122	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	108	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	121	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	116	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	104	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	100	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	116	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	113	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	122	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	127	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3656282)							
EB2111121-090	QC151_210421	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	91.9	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	115	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	99.2	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	122	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	114	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	104	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	117	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	108	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	97.8	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	102	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	108	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3647035)							
EB2111121-066	0861_QC147_210419	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	97.8	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	94.6	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	97.8	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3647035) - continued							
EB2111121-066	0861_QC147_210419	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	104	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	103	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	102	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	96.0	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3653347)							
EB2111227-001	Anonymous	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	90.2	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	97.8	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	83.8	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	85.5	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	88.9	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	83.0	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	85.0	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3656281)							
EB2111121-087	0861_QC144_210415	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	135	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	90.9	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	112	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	115	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	119	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	119	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	134	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3656282)							
EB2111121-090	QC151_210421	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	119	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	118	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3656282) - continued							
EB2111121-090	QC151_210421	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	128	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	114	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	119	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	122	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	111	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3647035)							
EB2111121-066	0861_QC147_210419	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	101	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	113	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	101	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	117	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3653347)							
EB2111227-001	Anonymous	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.468 µg/L	84.8	70.0	130
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.475 µg/L	90.5	70.0	130
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.48 µg/L	89.6	70.0	130
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.483 µg/L	98.8	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3656281)							
EB2111121-087	0861_QC144_210415	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	117	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	103	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	124	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	124	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3656282)							
EB2111121-090	QC151_210421	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	110	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	93.6	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	119	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	108	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2111121**	Page	: 1 of 16
Amendment	: **1**		
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 22-Apr-2021
Site	: ----	Issue Date	: 25-May-2021
Sampler	: [redacted]	No. of samples received	: 93
Order number	: 60612563 3.1	No. of samples analysed	: 93

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Duplicate outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2111121--065	0861_QC146_210419	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	26.0 %	0% - 20%	**RPD exceeds LOR based limits**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EA055: Moisture Content (Dried @ 105-110°C)						
HDPE Soil Jar						
0861_QC140_210412	----	----	----	27-Apr-2021	26-Apr-2021	**1**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count: QC	Count: Regular	Rate (%): Actual	Rate (%): Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	4	100	4.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	3	100	3.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) 0861_QC140_210412	**12-Apr-2021**	**----**	----	----	**27-Apr-2021**	26-Apr-2021	×
HDPE Soil Jar (EA055) 0861_QC143_210414, 0861_QC513_210419, 0861_QC514_210419	**14-Apr-2021**	**----**	----	----	**27-Apr-2021**	28-Apr-2021	✓
HDPE Soil Jar (EA055) 0861_QC146_210419	**19-Apr-2021**	**----**	----	----	**27-Apr-2021**	03-May-2021	✓
HDPE Soil Jar (EA055) 0861_QC150_210421	**21-Apr-2021**	**----**	----	----	**27-Apr-2021**	05-May-2021	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_QC140_210412	**12-Apr-2021**	**28-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_QC143_210414, 0861_QC513_210419, 0861_QC514_210419	**14-Apr-2021**	**28-Apr-2021**	11-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_QC146_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_QC150_210421	**21-Apr-2021**	**28-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0861_QC140_210412	**12-Apr-2021**	**28-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_QC143_210414, 0861_QC513_210419, 0861_QC514_210419	**14-Apr-2021**	**28-Apr-2021**	11-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_QC146_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_QC150_210421	**21-Apr-2021**	**28-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0861_QC140_210412	**12-Apr-2021**	**28-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_QC143_210414, 0861_QC513_210419, 0861_QC514_210419	**14-Apr-2021**	**28-Apr-2021**	11-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_QC146_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_QC150_210421	**21-Apr-2021**	**28-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_QC140_210412	**12-Apr-2021**	**28-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_QC143_210414, 0861_QC513_210419, 0861_QC514_210419	**14-Apr-2021**	**28-Apr-2021**	11-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_QC146_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_QC150_210421	**21-Apr-2021**	**28-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0861_QC140_210412	**12-Apr-2021**	**28-Apr-2021**	09-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_QC143_210414, 0861_QC513_210419, 0861_QC514_210419	**14-Apr-2021**	**28-Apr-2021**	11-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_QC146_210419	**19-Apr-2021**	**28-Apr-2021**	16-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓
HDPE Soil Jar (EP231X) 0861_QC150_210421	**21-Apr-2021**	**28-Apr-2021**	18-Oct-2021	✓	**29-Apr-2021**	07-Jun-2021	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_QC141_210412, 0861_QC330_210412, 0861_QC434_210412, 0861_QC511_210412	**12-Apr-2021**	**04-May-2021**	09-Oct-2021	✓	**04-May-2021**	09-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW005_210412, 0861_SW015_210412, 0861_SW016_210412, 0861_SW018_210412, 0861_SW020_210412, 0861_SW034_210412, 0861_SW028_210412	**12-Apr-2021**	**30-Apr-2021**	09-Oct-2021	✓	**30-Apr-2021**	09-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC331_210413, 0861_QC435_210413	**13-Apr-2021**	**04-May-2021**	10-Oct-2021	✓	**04-May-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW051_210413, 0861_SW099_210413, 0861_SW100_210413, 0861_SW049_210413, 0861_SW089_210413, 0861_SW052_210413, 0861_SW088_210413, 0861_MW030_210413, 0861_MW031_210413, 0861_MW002_210413	**13-Apr-2021**	**30-Apr-2021**	10-Oct-2021	✓	**30-Apr-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC142_210414, 0861_QC332_210414, 0861_QC436_210414	**14-Apr-2021**	**04-May-2021**	11-Oct-2021	✓	**04-May-2021**	11-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW090_210414, 0861_SW091_210414, 0861_SW047_210414, 0861_SW050_210414, 0861_SW036_210414, 0861_SW094_210414, 0861_SW009_210414, 0861_SW004_210414	**14-Apr-2021**	**30-Apr-2021**	11-Oct-2021	✓	**30-Apr-2021**	11-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC144_210415, 0861_QC333_210415, 0861_QC437_210415	**15-Apr-2021**	**04-May-2021**	12-Oct-2021	✓	**04-May-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW008_210415, 0861_SW033_210415, 0861_MW042_210415, 0861_MW043_210415	**15-Apr-2021**	**30-Apr-2021**	12-Oct-2021	✓	**30-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC334_210416	**16-Apr-2021**	**04-May-2021**	13-Oct-2021	✓	**04-May-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_MW048_210416, 0861_MW022_210416, 0861_MW055S_210416, 0861_MW055D_210416, 0861_MW035_210416, 0861_MW036_210416, 0861_MW028_210416, 0861_MW029_210416, 0861_MW025_210416, 0861_QC438_210416	**16-Apr-2021**	**30-Apr-2021**	13-Oct-2021	✓	**30-Apr-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC512_210419	**19-Apr-2021**	**04-May-2021**	16-Oct-2021	✓	**04-May-2021**	16-Oct-2021	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
0861_SW064_210419, 0861_SW079_210419, 0861_SW053_210419, 0861_MW034_210419, 0861_QC145_210419, 0861_QC335_210419,	0861_SW067_210419, 0861_SW080_210419, 0861_MW007_210419, 0861_MW021_210419, 0861_QC147_210419, 0861_QC439_210419	**19-Apr-2021**	**30-Apr-2021**	16-Oct-2021	✓	**30-Apr-2021**	16-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_MW026_210421, 0861_QC440_210420	0861_QC336_210420,	**20-Apr-2021**	**04-May-2021**	17-Oct-2021	✓	**04-May-2021**	17-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_MW024_210420, 0861_MW309_210420, 0861_MW020_210420, 0861_MW047_210420, 0861_QC148_210420	0861_MW033_210420, 0861_MW012_210420, 0861_MW037_210420, 0861_MW046_210421,	**20-Apr-2021**	**30-Apr-2021**	17-Oct-2021	✓	**30-Apr-2021**	17-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC149_210421, 0861_QC441_210421,	0861_QC337_210421, QC151_210421	**21-Apr-2021**	**04-May-2021**	18-Oct-2021	✓	**04-May-2021**	18-Oct-2021	✓
HDPE (no PTFE) (EP231X-INJ) 0861_MW032_210421, 0861_MW005_210421, 0861_MW023_210421,	0861_MW050_210421, 0861_MW006_210421, 0861_MW044_210421	**21-Apr-2021**	**30-Apr-2021**	18-Oct-2021	✓	**30-Apr-2021**	18-Oct-2021	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0861_QC141_210412, 0861_QC330_210412, 0861_QC434_210412, 0861_QC511_210412	**12-Apr-2021**	**04-May-2021**	09-Oct-2021	✓	**04-May-2021**	09-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW005_210412, 0861_SW015_210412, 0861_SW016_210412, 0861_SW018_210412, 0861_SW020_210412, 0861_SW034_210412, 0861_SW028_210412	**12-Apr-2021**	**30-Apr-2021**	09-Oct-2021	✓	**30-Apr-2021**	09-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC331_210413, 0861_QC435_210413	**13-Apr-2021**	**04-May-2021**	10-Oct-2021	✓	**04-May-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW051_210413, 0861_SW099_210413, 0861_SW100_210413, 0861_SW049_210413, 0861_SW089_210413, 0861_SW052_210413, 0861_SW088_210413, 0861_MW030_210413, 0861_MW031_210413, 0861_MW002_210413	**13-Apr-2021**	**30-Apr-2021**	10-Oct-2021	✓	**30-Apr-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC142_210414, 0861_QC332_210414, 0861_QC436_210414	**14-Apr-2021**	**04-May-2021**	11-Oct-2021	✓	**04-May-2021**	11-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW090_210414, 0861_SW091_210414, 0861_SW047_210414, 0861_SW050_210414, 0861_SW036_210414, 0861_SW094_210414, 0861_SW009_210414, 0861_SW004_210414	**14-Apr-2021**	**30-Apr-2021**	11-Oct-2021	✓	**30-Apr-2021**	11-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC144_210415, 0861_QC333_210415, 0861_QC437_210415	**15-Apr-2021**	**04-May-2021**	12-Oct-2021	✓	**04-May-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW008_210415, 0861_SW033_210415, 0861_MW042_210415, 0861_MW043_210415	**15-Apr-2021**	**30-Apr-2021**	12-Oct-2021	✓	**30-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC334_210416	**16-Apr-2021**	**04-May-2021**	13-Oct-2021	✓	**04-May-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_MW048_210416, 0861_MW022_210416, 0861_MW055S_210416, 0861_MW055D_210416, 0861_MW035_210416, 0861_MW036_210416, 0861_MW028_210416, 0861_MW029_210416, 0861_MW025_210416, 0861_QC438_210416	**16-Apr-2021**	**30-Apr-2021**	13-Oct-2021	✓	**30-Apr-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC512_210419	**19-Apr-2021**	**04-May-2021**	16-Oct-2021	✓	**04-May-2021**	16-Oct-2021	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
0861_SW064_210419, 0861_SW079_210419, 0861_SW053_210419, 0861_MW034_210419, 0861_QC145_210419, 0861_QC335_210419,	0861_SW067_210419, 0861_SW080_210419, 0861_MW007_210419, 0861_MW021_210419, 0861_QC147_210419, 0861_QC439_210419	**19-Apr-2021**	**30-Apr-2021**	16-Oct-2021	✓	**30-Apr-2021**	16-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_MW026_210421, 0861_QC440_210420	0861_QC336_210420,	**20-Apr-2021**	**04-May-2021**	17-Oct-2021	✓	**04-May-2021**	17-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_MW024_210420, 0861_MW309_210420, 0861_MW020_210420, 0861_MW047_210420, 0861_QC148_210420	0861_MW033_210420, 0861_MW012_210420, 0861_MW037_210420, 0861_MW046_210421,	**20-Apr-2021**	**30-Apr-2021**	17-Oct-2021	✓	**30-Apr-2021**	17-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC149_210421, 0861_QC441_210421,	0861_QC337_210421, QC151_210421	**21-Apr-2021**	**04-May-2021**	18-Oct-2021	✓	**04-May-2021**	18-Oct-2021	✓
HDPE (no PTFE) (EP231X-INJ) 0861_MW032_210421, 0861_MW005_210421, 0861_MW023_210421,	0861_MW050_210421, 0861_MW006_210421, 0861_MW044_210421	**21-Apr-2021**	**30-Apr-2021**	18-Oct-2021	✓	**30-Apr-2021**	18-Oct-2021	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0861_QC141_210412, 0861_QC330_210412, 0861_QC434_210412, 0861_QC511_210412	**12-Apr-2021**	**04-May-2021**	09-Oct-2021	✓	**04-May-2021**	09-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW005_210412, 0861_SW015_210412, 0861_SW016_210412, 0861_SW018_210412, 0861_SW020_210412, 0861_SW034_210412, 0861_SW028_210412	**12-Apr-2021**	**30-Apr-2021**	09-Oct-2021	✓	**30-Apr-2021**	09-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC331_210413, 0861_QC435_210413	**13-Apr-2021**	**04-May-2021**	10-Oct-2021	✓	**04-May-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW051_210413, 0861_SW099_210413, 0861_SW100_210413, 0861_SW049_210413, 0861_SW089_210413, 0861_SW052_210413, 0861_SW088_210413, 0861_MW030_210413, 0861_MW031_210413, 0861_MW002_210413	**13-Apr-2021**	**30-Apr-2021**	10-Oct-2021	✓	**30-Apr-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC142_210414, 0861_QC332_210414, 0861_QC436_210414	**14-Apr-2021**	**04-May-2021**	11-Oct-2021	✓	**04-May-2021**	11-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW090_210414, 0861_SW091_210414, 0861_SW047_210414, 0861_SW050_210414, 0861_SW036_210414, 0861_SW094_210414, 0861_SW009_210414, 0861_SW004_210414	**14-Apr-2021**	**30-Apr-2021**	11-Oct-2021	✓	**30-Apr-2021**	11-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC144_210415, 0861_QC333_210415, 0861_QC437_210415	**15-Apr-2021**	**04-May-2021**	12-Oct-2021	✓	**04-May-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW008_210415, 0861_SW033_210415, 0861_MW042_210415, 0861_MW043_210415	**15-Apr-2021**	**30-Apr-2021**	12-Oct-2021	✓	**30-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC334_210416	**16-Apr-2021**	**04-May-2021**	13-Oct-2021	✓	**04-May-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_MW048_210416, 0861_MW022_210416, 0861_MW055S_210416, 0861_MW055D_210416, 0861_MW035_210416, 0861_MW036_210416, 0861_MW028_210416, 0861_MW029_210416, 0861_MW025_210416, 0861_QC438_210416	**16-Apr-2021**	**30-Apr-2021**	13-Oct-2021	✓	**30-Apr-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC512_210419	**19-Apr-2021**	**04-May-2021**	16-Oct-2021	✓	**04-May-2021**	16-Oct-2021	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides - Continued								
0861_SW064_210419,	0861_SW067_210419,	**19-Apr-2021**	**30-Apr-2021**	16-Oct-2021	✓	**30-Apr-2021**	16-Oct-2021	✓
0861_SW079_210419,	0861_SW080_210419,							
0861_SW053_210419,	0861_MW007_210419,							
0861_MW034_210419,	0861_MW021_210419,							
0861_QC145_210419,	0861_QC147_210419,							
0861_QC335_210419,	0861_QC439_210419							
HDPE (no PTFE) (EP231X)								
0861_MW026_210421,	0861_QC336_210420,	**20-Apr-2021**	**04-May-2021**	17-Oct-2021	✓	**04-May-2021**	17-Oct-2021	✓
0861_QC440_210420								
HDPE (no PTFE) (EP231X)								
0861_MW024_210420,	0861_MW033_210420,	**20-Apr-2021**	**30-Apr-2021**	17-Oct-2021	✓	**30-Apr-2021**	17-Oct-2021	✓
0861_MW309_210420,	0861_MW012_210420,							
0861_MW020_210420,	0861_MW037_210420,							
0861_MW047_210420,	0861_MW046_210421,							
0861_QC148_210420								
HDPE (no PTFE) (EP231X)								
0861_QC149_210421,	0861_QC337_210421,	**21-Apr-2021**	**04-May-2021**	18-Oct-2021	✓	**04-May-2021**	18-Oct-2021	✓
0861_QC441_210421,	QC151_210421							
HDPE (no PTFE) (EP231X-INJ)								
0861_MW032_210421,	0861_MW050_210421,	**21-Apr-2021**	**30-Apr-2021**	18-Oct-2021	✓	**30-Apr-2021**	18-Oct-2021	✓
0861_MW005_210421,	0861_MW006_210421,							
0861_MW023_210421,	0861_MW044_210421							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_QC141_210412, 0861_QC330_210412, 0861_QC434_210412, 0861_QC511_210412	**12-Apr-2021**	**04-May-2021**	09-Oct-2021	✓	**04-May-2021**	09-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0861_SW005_210412, 0861_SW015_210412, 0861_SW016_210412, 0861_SW018_210412, 0861_SW020_210412, 0861_SW034_210412, 0861_SW028_210412	**12-Apr-2021**	**30-Apr-2021**	09-Oct-2021	✓	**30-Apr-2021**	09-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0861_QC331_210413, 0861_QC435_210413	**13-Apr-2021**	**04-May-2021**	10-Oct-2021	✓	**04-May-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0861_SW051_210413, 0861_SW099_210413, 0861_SW100_210413, 0861_SW049_210413, 0861_SW089_210413, 0861_SW052_210413, 0861_SW088_210413, 0861_MW030_210413, 0861_MW031_210413, 0861_MW002_210413	**13-Apr-2021**	**30-Apr-2021**	10-Oct-2021	✓	**30-Apr-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0861_QC142_210414, 0861_QC332_210414, 0861_QC436_210414	**14-Apr-2021**	**04-May-2021**	11-Oct-2021	✓	**04-May-2021**	11-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0861_SW090_210414, 0861_SW091_210414, 0861_SW047_210414, 0861_SW050_210414, 0861_SW036_210414, 0861_SW094_210414, 0861_SW009_210414, 0861_SW004_210414	**14-Apr-2021**	**30-Apr-2021**	11-Oct-2021	✓	**30-Apr-2021**	11-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0861_QC144_210415, 0861_QC333_210415, 0861_QC437_210415	**15-Apr-2021**	**04-May-2021**	12-Oct-2021	✓	**04-May-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0861_SW008_210415, 0861_SW033_210415, 0861_MW042_210415, 0861_MW043_210415	**15-Apr-2021**	**30-Apr-2021**	12-Oct-2021	✓	**30-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0861_QC334_210416	**16-Apr-2021**	**04-May-2021**	13-Oct-2021	✓	**04-May-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0861_MW048_210416, 0861_MW022_210416, 0861_MW055S_210416, 0861_MW055D_210416, 0861_MW035_210416, 0861_MW036_210416, 0861_MW028_210416, 0861_MW029_210416, 0861_MW025_210416, 0861_QC438_210416	**16-Apr-2021**	**30-Apr-2021**	13-Oct-2021	✓	**30-Apr-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X)							
0861_QC512_210419	**19-Apr-2021**	**04-May-2021**	16-Oct-2021	✓	**04-May-2021**	16-Oct-2021	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued								
0861_SW064_210419, 0861_SW079_210419, 0861_SW053_210419, 0861_MW034_210419, 0861_QC145_210419, 0861_QC335_210419,	0861_SW067_210419, 0861_SW080_210419, 0861_MW007_210419, 0861_MW021_210419, 0861_QC147_210419, 0861_QC439_210419	**19-Apr-2021**	**30-Apr-2021**	16-Oct-2021	✓	**30-Apr-2021**	16-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_MW026_210421, 0861_QC440_210420	0861_QC336_210420,	**20-Apr-2021**	**04-May-2021**	17-Oct-2021	✓	**04-May-2021**	17-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_MW024_210420, 0861_MW309_210420, 0861_MW020_210420, 0861_MW047_210420, 0861_QC148_210420	0861_MW033_210420, 0861_MW012_210420, 0861_MW037_210420, 0861_MW046_210421,	**20-Apr-2021**	**30-Apr-2021**	17-Oct-2021	✓	**30-Apr-2021**	17-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC149_210421, 0861_QC441_210421,	0861_QC337_210421, QC151_210421	**21-Apr-2021**	**04-May-2021**	18-Oct-2021	✓	**04-May-2021**	18-Oct-2021	✓
HDPE (no PTFE) (EP231X-INJ) 0861_MW032_210421, 0861_MW005_210421, 0861_MW023_210421,	0861_MW050_210421, 0861_MW006_210421, 0861_MW044_210421	**21-Apr-2021**	**30-Apr-2021**	18-Oct-2021	✓	**30-Apr-2021**	18-Oct-2021	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0861_QC141_210412, 0861_QC330_210412, 0861_QC434_210412, 0861_QC511_210412	**12-Apr-2021**	**04-May-2021**	09-Oct-2021	✓	**04-May-2021**	09-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW005_210412, 0861_SW015_210412, 0861_SW016_210412, 0861_SW018_210412, 0861_SW020_210412, 0861_SW034_210412, 0861_SW028_210412	**12-Apr-2021**	**30-Apr-2021**	09-Oct-2021	✓	**30-Apr-2021**	09-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC331_210413, 0861_QC435_210413	**13-Apr-2021**	**04-May-2021**	10-Oct-2021	✓	**04-May-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW051_210413, 0861_SW099_210413, 0861_SW100_210413, 0861_SW049_210413, 0861_SW089_210413, 0861_SW052_210413, 0861_SW088_210413, 0861_MW030_210413, 0861_MW031_210413, 0861_MW002_210413	**13-Apr-2021**	**30-Apr-2021**	10-Oct-2021	✓	**30-Apr-2021**	10-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC142_210414, 0861_QC332_210414, 0861_QC436_210414	**14-Apr-2021**	**04-May-2021**	11-Oct-2021	✓	**04-May-2021**	11-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW090_210414, 0861_SW091_210414, 0861_SW047_210414, 0861_SW050_210414, 0861_SW036_210414, 0861_SW094_210414, 0861_SW009_210414, 0861_SW004_210414	**14-Apr-2021**	**30-Apr-2021**	11-Oct-2021	✓	**30-Apr-2021**	11-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC144_210415, 0861_QC333_210415, 0861_QC437_210415	**15-Apr-2021**	**04-May-2021**	12-Oct-2021	✓	**04-May-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_SW008_210415, 0861_SW033_210415, 0861_MW042_210415, 0861_MW043_210415	**15-Apr-2021**	**30-Apr-2021**	12-Oct-2021	✓	**30-Apr-2021**	12-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC334_210416	**16-Apr-2021**	**04-May-2021**	13-Oct-2021	✓	**04-May-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_MW048_210416, 0861_MW022_210416, 0861_MW055S_210416, 0861_MW055D_210416, 0861_MW035_210416, 0861_MW036_210416, 0861_MW028_210416, 0861_MW029_210416, 0861_MW025_210416, 0861_QC438_210416	**16-Apr-2021**	**30-Apr-2021**	13-Oct-2021	✓	**30-Apr-2021**	13-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC512_210419	**19-Apr-2021**	**04-May-2021**	16-Oct-2021	✓	**04-May-2021**	16-Oct-2021	✓
HDPE (no PTFE) (EP231X)							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums - Continued								
0861_SW064_210419, 0861_SW079_210419, 0861_SW053_210419, 0861_MW034_210419, 0861_QC145_210419, 0861_QC335_210419,	0861_SW067_210419, 0861_SW080_210419, 0861_MW007_210419, 0861_MW021_210419, 0861_QC147_210419, 0861_QC439_210419	**19-Apr-2021**	**30-Apr-2021**	16-Oct-2021	✓	**30-Apr-2021**	16-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_MW026_210421, 0861_QC440_210420	0861_QC336_210420,	**20-Apr-2021**	**04-May-2021**	17-Oct-2021	✓	**04-May-2021**	17-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_MW024_210420, 0861_MW309_210420, 0861_MW020_210420, 0861_MW047_210420, 0861_QC148_210420	0861_MW033_210420, 0861_MW012_210420, 0861_MW037_210420, 0861_MW046_210421,	**20-Apr-2021**	**30-Apr-2021**	17-Oct-2021	✓	**30-Apr-2021**	17-Oct-2021	✓
HDPE (no PTFE) (EP231X) 0861_QC149_210421, 0861_QC441_210421,	0861_QC337_210421, QC151_210421	**21-Apr-2021**	**04-May-2021**	18-Oct-2021	✓	**04-May-2021**	18-Oct-2021	✓
HDPE (no PTFE) (EP231X-INJ) 0861_MW032_210421, 0861_MW005_210421, 0861_MW023_210421,	0861_MW050_210421, 0861_MW006_210421, 0861_MW044_210421	**21-Apr-2021**	**30-Apr-2021**	18-Oct-2021	✓	**30-Apr-2021**	18-Oct-2021	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	100	**4.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	6	100	**6.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	6	100	**6.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	100	**3.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with mobile phase solvent. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

Australian Government
Department of Industry, Science, Energy and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: LEVEL 8
FORTITUDE VALLEY QLD 4006

Email: [redacted]

Telephone:

Fax:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: [redacted]

Address: 105 Delhi Road, North Ryde, NSW
NSW 2113

Email: [redacted]

Telephone: [redacted]

Fax:

SAMPLE DETAILS

NMI Job Name: **AECO06/210407/1**

Total No. of Samples: **4**

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N21/008926	14-APR-2021	0861_QC237_210330	WATER 30/03/2021
N21/008927	14-APR-2021	0861_QC238_210330	SOIL 30/03/2021
N21/008928	14-APR-2021	0861_QC239_210330	WATER 30/03/2021
N21/008929	14-APR-2021	0861_QC240_210330	SOIL 30/03/2021

SAMPLE RECEIVED CONDITION

Date samples received:	7-APR-2021
Sample received in good order:	Yes
NMI Quotation no. provided:	QLD_0861_PFASOMP
Client purchase order number:	60612563_3_1
Temperature of samples:	Chilled
Comments:	
Mode of Delivery:	Courier

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/210407/1
	LEVEL 8	**Quote No.**	: QT-02018
	540 WICKHAM STREET	**Order No.**	: 60612563_3_1
		Date Received	: 07-APR-2021
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: 60612563 3.1		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N21/008927	0861_QC238_210330	SEDIMENT 30/03/2021
N21/008929	0861_QC240_210330	SEDIMENT 30/03/2021

Lab Reg No.		N21/008927	N21/008929			
Date Sampled		30-MAR-2021	30-MAR-2021			
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	mg/kg	0.0030	<0.002			NR70
PFPeA (2706-90-3)	mg/kg	0.0054	0.0030			NR70
PFHxA (307-24-4)	mg/kg	0.0042	0.0018			NR70
PFHpA (375-85-9)	mg/kg	0.0016	<0.001			NR70
PFOA (335-67-1)	mg/kg	0.0025	0.0015			NR70
PFNA (375-95-1)	mg/kg	0.0031	0.0010			NR70
PFDA (335-76-2)	mg/kg	0.0049	0.0037			NR70
PFUdA (2058-94-8)	mg/kg	0.0062	0.0030			NR70
PFDoA (307-55-1)	mg/kg	0.011	0.0025			NR70
PFTrDA (72629-94-8)	mg/kg	0.0032	<0.002			NR70
PFTeDA (376-06-7)	mg/kg	0.0028	<0.002			NR70
PFHxDA (67905-19-5)	mg/kg	<0.002	<0.002			NR70
PFODA (16517-11-6)	mg/kg	<0.005	<0.005			NR70
FOUEA (70887-84-2)	mg/kg	<0.001	<0.001			NR70
PFBS (375-73-5)	mg/kg	0.0011	<0.001			NR70
PFPeS (2706-91-4)	mg/kg	<0.001	<0.001			NR70
PFHxS (355-46-4)	mg/kg	0.011	0.0044			NR70
PFHpS (375-92-8)	mg/kg	<0.001	<0.001			NR70
PFOS (1763-23-1)	mg/kg	0.13	0.10			NR70
PFNS (68259-12-1)	mg/kg	<0.001	0.0014			NR70
PFDS (335-77-3)	mg/kg	<0.001	0.0016			NR70
PFOSA (754-91-6)	mg/kg	<0.001	<0.001			NR70
N-MeFOSA (31506-32-8)	mg/kg	<0.002	<0.002			NR70
N-EtFOSA (4151-50-2)	mg/kg	<0.002	<0.002			NR70
N-MeFOSAA (2355-31-9)	mg/kg	<0.002	<0.002			NR70
N-EtFOSAA(2991-50-6)	mg/kg	<0.002	<0.002			NR70
N-MeFOSE (24448-09-7)	mg/kg	<0.005	<0.005			NR70
N-EtFOSE (1691-99-2)	mg/kg	<0.005	<0.005			NR70
4:2 FTS (757124-72-4)	mg/kg	<0.001	<0.001			NR70

REPORT OF ANALYSIS

Lab Reg No.		N21/008927	N21/008929			
Date Sampled		30-MAR-2021	30-MAR-2021			
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
6:2 FTS (27619-97-2)	mg/kg	0.0028	<0.001			NR70
8:2 FTS (39108-34-4)	mg/kg	0.0024	0.0021			NR70
10:2 FTS (120226-60-0)	mg/kg	<0.002	<0.002			NR70
8:2 diPAP (678-41-1)	mg/kg	<0.002	<0.002			NR70
PFBA (Surrogate Recovery)	%	111	106			NR70
PFPeA (Surrogate Recovery)	%	111	111			NR70
PFHxA (Surrogate Recovery)	%	117	111			NR70
PFHpA (Surrogate Recovery)	%	120	111			NR70
PFOA (Surrogate Recovery)	%	115	111			NR70
PFNA (Surrogate Recovery)	%	111	106			NR70
PFDA (Surrogate Recovery)	%	104	114			NR70
PFUdA (Surrogate Recovery)	%	117	105			NR70
PFDoA (Surrogate Recovery)	%	97	105			NR70
PFTeDA (Surrogate Recovery)	%	103	113			NR70
PFHxDA (Surrogate Recovery)	%	99	110			NR70
FOUEA (Surrogate Recovery)	%	81	65			NR70
PFBS (Surrogate Recovery)	%	118	105			NR70
PFHxS (Surrogate Recovery)	%	121	115			NR70
PFOS (Surrogate Recovery)	%	111	93			NR70
PFOSA (Surrogate Recovery)	%	98	109			NR70
N-MeFOSA (Surrogate Recovery)	%	88	104			NR70
N-EtFOSA (Surrogate Recovery)	%	107	97			NR70
N-MeFOSAA (Surrogate Recovery)	%	100	85			NR70
N-EtFOSAA (Surrogate Recovery)	%	105	80			NR70
N-MeFOSE (Surrogate Recovery)	%	64	67			NR70
N-EtFOSE (Surrogate Recovery)	%	79	69			NR70
4:2 FTS (Surrogate Recovery)	%	85	76			NR70
6:2 FTS (Surrogate Recovery)	%	74	87			NR70
8:2 FTS (Surrogate Recovery)	%	76	64			NR70
8:2 diPAP (Surrogate Recovery)	%	134	84			NR70
Dates						
Date extracted		12-APR-2021	12-APR-2021			
Date analysed		13-APR-2021	13-APR-2021			

N21/008927
to
N21/008929

PFOS and PFHxS are quantified using a combined branched and linear standard,

REPORT OF ANALYSIS

linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

[redacted] Analyst
Organics - NSW
Accreditation No. 198

14-APR-2021

Lab Reg No.		N21/008927	N21/008929			
Date Sampled		30-MAR-2021	30-MAR-2021			
	Units					Method
Trace Elements						
Total Solids	%	55.8	69.0			NT2_49
Dates						
Date extracted		8-APR-2021	8-APR-2021			
Date analysed		9-APR-2021	9-APR-2021			

[redacted]i, Analyst
Inorganics - NSW
Accreditation No. 198

14-APR-2021

All results are expressed on a dry weight basis.

REPORT OF ANALYSIS

Report No. RN1310437

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/210407/1
	LEVEL 8	**Quote No.**	: QT-02018
	540 WICKHAM STREET	**Order No.**	: 60612563_3_1
		Date Received	: 07-APR-2021
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: 60612563 3.1		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N21/008926	0861_QC237_210330	WATER 30/03/2021
N21/008928	0861_QC239_210330	WATER 30/03/2021

Lab Reg No.			N21/008926	N21/008928			
Date Sampled			30-MAR-2021	30-MAR-2021			
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	<0.05	0.47			NR70
PFPeA (2706-90-3)		ug/L	<0.02	1.1			NR70
PFHxA (307-24-4)		ug/L	0.010	1.7			NR70
PFHpA (375-85-9)		ug/L	<0.01	0.36			NR70
PFOA (335-67-1)		ug/L	<0.01	0.42			NR70
PFNA (375-95-1)		ug/L	<0.01	0.018			NR70
PFDA (335-76-2)		ug/L	<0.01	<0.01			NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01			NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01			NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02			NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02			NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02			NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05			NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01			NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01			NR70
PFPeS (2706-91-4)		ug/L	<0.01	0.66			NR70
PFHxS (355-46-4)		ug/L	0.019	3.1			NR70
PFHpS (375-92-8)		ug/L	<0.01	0.090			NR70
PFOS (1763-23-1)		ug/L	<0.02	1.3			NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01			NR70
PFBS (375-73-5)		ug/L	<0.01	0.83			NR70
PFOSA (754-91-6)		ug/L	<0.01	<0.01			NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02			NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02			NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01			NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01			NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05			NR70
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05			NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01			NR70

REPORT OF ANALYSIS

Lab Reg No.			N21/008926	N21/008928			
Date Sampled			30-MAR-2021	30-MAR-2021			
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
6:2 FTS (27619-97-2)		ug/L	<0.01	0.043			NR70
8:2 FTS (39108-34-4)		ug/L	<0.01	<0.01			NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01			NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02			NR70
PFBA (Surrogate Recovery)		%	99	109			NR70
PFPeA (Surrogate Recovery)		%	95	89			NR70
PFHxA (Surrogate Recovery)		%	99	91			NR70
PFHpA (Surrogate Recovery)		%	101	91			NR70
PFOA (Surrogate Recovery)		%	96	94			NR70
PFNA (Surrogate Recovery)		%	103	98			NR70
PFDA (Surrogate Recovery)		%	90	88			NR70
PFUdA (Surrogate Recovery)		%	86	67			NR70
PFDoA (Surrogate Recovery)		%	77	66			NR70
PFTeDA (Surrogate Recovery)		%	76	67			NR70
PFHxDA (Surrogate Recovery)		%	83	66			NR70
FOUEA (Surrogate Recovery)		%	73	72			NR70
PFBS (Surrogate Recovery)		%	93	94			NR70
PFHxS (Surrogate Recovery)		%	96	83			NR70
PFOS (Surrogate Recovery)		%	113	116			NR70
PFOSA (Surrogate Recovery)		%	75	71			NR70
N-MeFOSA (Surrogate Recovery)		%	67	96			NR70
N-EtFOSA (Surrogate Recovery)		%	66	52			NR70
N-MeFOSAA (Surrogate Recovery)		%	82	51			NR70
N-EtFOSAA (Surrogate Recovery)		%	98	55			NR70
N-MeFOSE (Surrogate Recovery)		%	116	70			NR70
N-EtFOSE (Surrogate Recovery)		%	60	51			NR70
4:2 FTS (Surrogate Recovery)		%	69	73			NR70
6:2 FTS (Surrogate Recovery)		%	64	63			NR70
8:2 FTS (Surrogate Recovery)		%	64	67			NR70
8:2 diPAP (Surrogate Recovery)		%	99	77			NR70
Dates							
Date extracted			12-APR-2021	12-APR-2021			
Date analysed			13-APR-2021	13-APR-2021			

N21/008926
to
N21/008928

PFOS and PFHxS are quantified using a combined branched and linear standard,

linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

[redacted], Analyst
Organics - NSW
Accreditation No. 198

14-APR-2021

NATA
ACCREDITED FOR
TECHNICAL
COMPETENCE

This Report supersedes reports: *RN1310429*

Measurement Uncertainty is available upon request.
Chemical Accreditation 198: 105 Delhi Road, North Ryde, NSW, 2113

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/210407/1 **Sample Matrix:** Solid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		mg/kg	mg/kg	mg/kg	mg/kg	%	%	%
PFBA (375-22-4)	NR70	0.002	<0.002	NA	NA	NA	124	NA
PFPeA (2706-90-3)	NR70	0.002	<0.002	NA	NA	NA	101	NA
PFHxA (307-24-4)	NR70	0.001	<0.001	NA	NA	NA	104	NA
PFHpA (375-85-9)	NR70	0.001	<0.001	NA	NA	NA	106	NA
PFOA (335-67-1)	NR70	0.001	<0.001	NA	NA	NA	107	NA
PFNA (375-95-1)	NR70	0.001	<0.001	NA	NA	NA	107	NA
PFDA (335-76-2)	NR70	0.001	<0.001	NA	NA	NA	104	NA
PFUdA (2058-94-8)	NR70	0.002	<0.002	NA	NA	NA	104	NA
PFDoA (307-55-1)	NR70	0.002	<0.002	NA	NA	NA	106	NA
PFTrDA (72629-94-8)	NR70	0.002	<0.002	NA	NA	NA	105	NA
PFTeDA (376-06-7)	NR70	0.002	<0.002	NA	NA	NA	113	NA
PFHxDA (67905-19-5)	NR70	0.002	<0.002	NA	NA	NA	110	NA
PFODA (16517-11-6)	NR70	0.005	<0.005	NA	NA	NA	100	NA
FOUEA (70887-84-2)	NR70	0.001	<0.001	NA	NA	NA	110	NA
PFBS (375-73-5)	NR70	0.001	<0.001	NA	NA	NA	109	NA
PFPeS (2706-91-4)	NR70	0.001	<0.001	NA	NA	NA	110	NA
PFHxS (355-46-4)	NR70	0.001	<0.001	NA	NA	NA	106	NA
PFHpS (375-92-8)	NR70	0.001	<0.001	NA	NA	NA	105	NA
PFOS (1763-23-1)	NR70	0.002	<0.002	NA	NA	NA	126	NA
PFNS (68259-12-1)	NR70	0.001	<0.001	NA	NA	NA	108	NA
PFDS (335-77-3)	NR70	0.001	<0.001	NA	NA	NA	104	NA
PFOSA (754-91-6)	NR70	0.001	<0.001	NA	NA	NA	99	NA
N-MeFOSA (31506-32-8)	NR70	0.002	<0.002	NA	NA	NA	148	NA
N-EtFOSA (4151-50-2)	NR70	0.002	<0.002	NA	NA	NA	112	NA
N-MeFOSAA (2355-31-9)	NR70	0.002	<0.002	NA	NA	NA	120	NA
N-EtFOSAA(2991-50-6)	NR70	0.002	<0.002	NA	NA	NA	86	NA
N-MeFOSE (24448-09-7)	NR70	0.005	<0.005	NA	NA	NA	94	NA
N-EtFOSE (1691-99-2)	NR70	0.005	<0.005	NA	NA	NA	126	NA
4:2 FTS (757124-72-4)	NR70	0.001	<0.001	NA	NA	NA	99	NA
6:2 FTS (27619-97-2)	NR70	0.001	<0.001	NA	NA	NA	122	NA
8:2 FTS (39108-34-4)	NR70	0.001	<0.001	NA	NA	NA	122	NA
10:2 FTS (120226-60-0)	NR70	0.002	<0.002	NA	NA	NA	130	NA
8:2 diPAP (678-41-1)	NR70	0.002	<0.002	NA	NA	NA	104	NA

Results expressed in percentage (%) or mg/kg wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

[redacted]
Organics Manager, NMI-North Ryde

Date: **14/04/2021**

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/210407/1 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	114	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	104	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	110	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	106	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	101	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	107	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	98	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	111	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	102	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	112	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	108	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	109	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	112	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	100	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	99	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	108	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	104	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	108	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	103	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	96	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	110	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	99	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	107	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	65	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	150	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	105	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	115	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	100	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	109	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	117	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

[redacted]
Organics Manager, NMI-North Ryde

Date: **14/04/2021**

Australian Government
Department of Industry, Science, Energy and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]N

Customer: AECOM AUSTRALIA PTY LTD

Address: LEVEL 8
FORTITUDE VALLEY QLD 4006

Email: [redacted]

Telephone:

Fax:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: [redacted]

Address: 105 Delhi Road, North Ryde, NSW
NSW 2113

Email: [redacted]

Telephone: [redacted]

Fax:

SAMPLE DETAILS

NMI Job Name: **AECO06/210428/1**

Total No. of Samples: **12**

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N21/010834	5-MAY-2021	0861_QC240_210412	SOIL 12.04.21
N21/010835	5-MAY-2021	0861_QC241_210412	WATER 12.04.21
N21/010836	5-MAY-2021	0861_QC242_210414	WATER 14.04.21
N21/010837	5-MAY-2021	0861_QC243_210414	SOIL 14.04.21
N21/010838	5-MAY-2021	0861_QC244_210415	WATER 15.04.21
N21/010839	5-MAY-2021	0861_QC245_210419	WATER 19.04.21
N21/010840	5-MAY-2021	0861_QC246_210419	SOIL 19.04.21
N21/010841	5-MAY-2021	0861_QC247_210419	WATER 19.04.21
N21/010842	5-MAY-2021	0861_QC248_210420	WATER 20.04.21
N21/010843	5-MAY-2021	0861_QC249_210421	WATER 21.04.21
N21/010844	5-MAY-2021	0861_QC250_210421	SOIL 21.04.21

SAMPLE RECEIVED CONDITION

Date samples received:	28-APR-2021
Sample received in good order:	Yes
NMI Quotation no. provided:	
Client purchase order number:	60612563_3_1
Temperature of samples:	Chilled
Comments:	ALL OK
Mode of Delivery:	Courier

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/210428/1
	LEVEL 8	**Quote No.**	: QT-02018
	540 WICKHAM STREET	**Order No.**	: 60612563_3_1
		Date Received	: 28-APR-2021
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N21/010834	0861_QC240_210412	SOIL 12.04.21
N21/010837	0861_QC243_210414	SOIL 14.04.21
N21/010840	0861_QC246_210419	SOIL 19.04.21
N21/010844	0861_QC250_210421	SOIL 21.04.21

Lab Reg No.		N21/010834	N21/010837	N21/010840	N21/010844	
Date Sampled		12-APR-2021	14-APR-2021	19-APR-2021	21-APR-2021	
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFPeA (2706-90-3)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFHxA (307-24-4)	mg/kg	<0.001	<0.001	0.0015	<0.001	NR70
PFHpA (375-85-9)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFOA (335-67-1)	mg/kg	<0.001	<0.001	0.0018	<0.001	NR70
PFNA (375-95-1)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFDA (335-76-2)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFUdA (2058-94-8)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFDoA (307-55-1)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFTrDA (72629-94-8)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFTeDA (376-06-7)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFHxDA (67905-19-5)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFODA (16517-11-6)	mg/kg	<0.005	<0.005	<0.005	<0.005	NR70
FOUEA (70887-84-2)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFBS (375-73-5)	mg/kg	<0.001	<0.001	0.0010	<0.001	NR70
PFPeS (2706-91-4)	mg/kg	<0.001	<0.001	0.0014	<0.001	NR70
PFHxS (355-46-4)	mg/kg	0.0047	<0.001	0.021	<0.001	NR70
PFHpS (375-92-8)	mg/kg	<0.001	<0.001	0.0031	<0.001	NR70
PFOS (1763-23-1)	mg/kg	0.079	0.0059	0.20	<0.002	NR70
PFNS (68259-12-1)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFDS (335-77-3)	mg/kg	0.0015	<0.001	<0.001	<0.001	NR70
PFOSA (754-91-6)	mg/kg	0.0018	<0.001	<0.001	<0.001	NR70
N-MeFOSA (31506-32-8)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
N-EtFOSA (4151-50-2)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
N-MeFOSAA (2355-31-9)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
N-EtFOSAA(2991-50-6)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
N-MeFOSE (24448-09-7)	mg/kg	<0.005	<0.005	<0.005	<0.005	NR70

REPORT OF ANALYSIS

Lab Reg No.		N21/010834	N21/010837	N21/010840	N21/010844	
Date Sampled		12-APR-2021	14-APR-2021	19-APR-2021	21-APR-2021	
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
N-EtFOSE (1691-99-2)	mg/kg	<0.005	<0.005	<0.005	<0.005	NR70
4:2 FTS (757124-72-4)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
6:2 FTS (27619-97-2)	mg/kg	0.0023	<0.001	<0.001	<0.001	NR70
8:2 FTS (39108-34-4)	mg/kg	0.0016	<0.001	<0.001	<0.001	NR70
10:2 FTS (120226-60-0)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
8:2 diPAP (678-41-1)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFBA (Surrogate Recovery)	%	76	76	77	74	NR70
PFPeA (Surrogate Recovery)	%	75	134	88	75	NR70
PFHxA (Surrogate Recovery)	%	80	150	83	86	NR70
PFHpA (Surrogate Recovery)	%	79	82	82	87	NR70
PFOA (Surrogate Recovery)	%	79	73	84	86	NR70
PFNA (Surrogate Recovery)	%	79	79	80	94	NR70
PFDA (Surrogate Recovery)	%	82	82	84	86	NR70
PFUdA (Surrogate Recovery)	%	84	55	79	79	NR70
PFDoA (Surrogate Recovery)	%	76	59	72	66	NR70
PFTeDA (Surrogate Recovery)	%	87	76	74	52	NR70
PFHxDA (Surrogate Recovery)	%	65	21	75	65	NR70
FOUEA (Surrogate Recovery)	%	70	25	62	25	NR70
PFBS (Surrogate Recovery)	%	70	158	71	77	NR70
PFHxS (Surrogate Recovery)	%	78	150	80	81	NR70
PFOS (Surrogate Recovery)	%	78	64	69	68	NR70
PFOSA (Surrogate Recovery)	%	73	77	78	90	NR70
N-MeFOSA (Surrogate Recovery)	%	70	55	74	49	NR70
N-EtFOSA (Surrogate Recovery)	%	67	61	75	79	NR70
N-MeFOSAA (Surrogate Recovery)	%	75	74	74	66	NR70
N-EtFOSAA (Surrogate Recovery)	%	83	87	64	54	NR70
N-MeFOSE (Surrogate Recovery)	%	77	47	63	44	NR70
N-EtFOSE (Surrogate Recovery)	%	61	65	46	34	NR70
4:2 FTS (Surrogate Recovery)	%	59	145	55	42	NR70
6:2 FTS (Surrogate Recovery)	%	59	64	72	48	NR70
8:2 FTS (Surrogate Recovery)	%	77	109	79	52	NR70
8:2 diPAP (Surrogate Recovery)	%	66	85	75	47	NR70
Dates						
Date extracted		3-MAY-2021	3-MAY-2021	3-MAY-2021	3-MAY-2021	
Date analysed		3-MAY-2021	3-MAY-2021	3-MAY-2021	3-MAY-2021	

N21/010834
to
N21/010844

REPORT OF ANALYSIS

PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

[redacted], Analyst
Organics - NSW
Accreditation No. 198

05-MAY-2021

Lab Reg No.		**N21/010834**	**N21/010837**	**N21/010840**	**N21/010844**	
Date Sampled		**12-APR-2021**	**14-APR-2021**	**19-APR-2021**	**21-APR-2021**	
	Units					**Method**
Trace Elements						
Total Solids	%	70.1	48.1	59.7	67.1	NT2_49
Dates						
Date extracted		4-MAY-2021	4-MAY-2021	4-MAY-2021	4-MAY-2021	
Date analysed		5-MAY-2021	5-MAY-2021	5-MAY-2021	5-MAY-2021	

[redacted], Analyst
Inorganics - NSW
Accreditation No. 198

05-MAY-2021

All results are expressed on a dry weight basis.

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/210428/1
	LEVEL 8	**Quote No.**	: QT-02018
	540 WICKHAM STREET	**Order No.**	: 60612563_3_1
		Date Received	: 28-APR-2021
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N21/010835	0861_QC241_210412	WATER 12.04.21
N21/010836	0861_QC242_210414	WATER 14.04.21
N21/010838	0861_QC244_210415	WATER 15.04.21
N21/010839	0861_QC245_210419	WATER 19.04.21

Lab Reg No.			N21/010835	N21/010836	N21/010838	N21/010839	
Date Sampled			12-APR-2021	14-APR-2021	15-APR-2021	19-APR-2021	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	<0.05	<0.05	<0.05	0.42	NR70
PFPeA (2706-90-3)		ug/L	<0.02	<0.02	<0.02	0.73	NR70
PFHxA (307-24-4)		ug/L	<0.01	<0.01	<0.01	2.2	NR70
PFHpA (375-85-9)		ug/L	<0.01	<0.01	<0.01	0.41	NR70
PFOA (335-67-1)		ug/L	<0.01	<0.01	<0.01	0.60	NR70
PFNA (375-95-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDA (335-76-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFPeS (2706-91-4)		ug/L	<0.01	<0.01	<0.01	1.5	NR70
PFHxS (355-46-4)		ug/L	0.017	<0.01	<0.01	10	NR70
PFHpS (375-92-8)		ug/L	<0.01	<0.01	<0.01	0.49	NR70
PFOS (1763-23-1)		ug/L	<0.02	<0.02	<0.02	6.3	NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFBS (375-73-5)		ug/L	<0.01	<0.01	<0.01	1.7	NR70
PFOSA (754-91-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70

REPORT OF ANALYSIS

Lab Reg No.			N21/010835	N21/010836	N21/010838	N21/010839	
Date Sampled			12-APR-2021	14-APR-2021	15-APR-2021	19-APR-2021	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)		ug/L	<0.01	<0.01	<0.01	0.040	NR70
8:2 FTS (39108-34-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)		%	113	107	106	105	NR70
PFPeA (Surrogate Recovery)		%	103	91	108	105	NR70
PFHxA (Surrogate Recovery)		%	108	109	104	89	NR70
PFHpA (Surrogate Recovery)		%	115	104	114	106	NR70
PFOA (Surrogate Recovery)		%	101	106	107	107	NR70
PFNA (Surrogate Recovery)		%	102	106	109	108	NR70
PFDA (Surrogate Recovery)		%	96	100	91	90	NR70
PFUdA (Surrogate Recovery)		%	88	91	96	70	NR70
PFDoA (Surrogate Recovery)		%	75	84	94	64	NR70
PFTeDA (Surrogate Recovery)		%	75	82	97	59	NR70
PFHxDA (Surrogate Recovery)		%	87	81	106	88	NR70
FOUEA (Surrogate Recovery)		%	82	87	91	67	NR70
PFBS (Surrogate Recovery)		%	98	96	92	106	NR70
PFHxS (Surrogate Recovery)		%	107	105	105	85	NR70
PFOS (Surrogate Recovery)		%	96	85	82	88	NR70
PFOSA (Surrogate Recovery)		%	80	87	92	61	NR70
N-MeFOSA (Surrogate Recovery)		%	65	67	70	40	NR70
N-EtFOSA (Surrogate Recovery)		%	54	64	70	56	NR70
N-MeFOSAA (Surrogate Recovery)		%	68	91	81	57	NR70
N-EtFOSAA (Surrogate Recovery)		%	80	75	78	56	NR70
N-MeFOSE (Surrogate Recovery)		%	83	123	88	49	NR70
N-EtFOSE (Surrogate Recovery)		%	83	105	107	84	NR70
4:2 FTS (Surrogate Recovery)		%	62	76	59	73	NR70
6:2 FTS (Surrogate Recovery)		%	78	71	70	81	NR70
8:2 FTS (Surrogate Recovery)		%	79	78	83	72	NR70
8:2 diPAP (Surrogate Recovery)		%	99	85	114	98	NR70
Dates							
Date extracted			4-MAY-2021	4-MAY-2021	4-MAY-2021	4-MAY-2021	
Date analysed			4-MAY-2021	4-MAY-2021	4-MAY-2021	4-MAY-2021	

N21/010835
to
N21/010845

REPORT OF ANALYSIS

PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

[redacted]r, Analyst
Organics - NSW
Accreditation No. 198

05-MAY-2021

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/210428/1
	LEVEL 8	**Quote No.**	: QT-02018
	540 WICKHAM STREET	**Order No.**	: 60612563_3_1
		Date Received	: 28-APR-2021
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N21/010841	0861_QC247_210419	WATER 19.04.21
N21/010842	0861_QC248_210420	WATER 20.04.21
N21/010843	0861_QC249_210421	WATER 21.04.21
N21/010845	0861_QC251_210421	WATER 21.04.21

Lab Reg No.			N21/010841	N21/010842	N21/010843	N21/010845	
Date Sampled			19-APR-2021	20-APR-2021	21-APR-2021	21-APR-2021	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	<0.05	0.19	0.58	<0.05	NR70
PFPeA (2706-90-3)		ug/L	<0.02	0.14	0.60	<0.02	NR70
PFHxA (307-24-4)		ug/L	<0.01	0.16	2.2	<0.01	NR70
PFHpA (375-85-9)		ug/L	<0.01	0.010	0.70	<0.01	NR70
PFOA (335-67-1)		ug/L	<0.01	0.025	1.6	<0.01	NR70
PFNA (375-95-1)		ug/L	<0.01	<0.01	0.048	<0.01	NR70
PFDA (335-76-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFPeS (2706-91-4)		ug/L	<0.01	0.10	1.3	<0.01	NR70
PFHxS (355-46-4)		ug/L	<0.01	1.0	5.9	<0.01	NR70
PFHpS (375-92-8)		ug/L	<0.01	0.050	0.55	<0.01	NR70
PFOS (1763-23-1)		ug/L	<0.02	1.8	13	<0.02	NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFBS (375-73-5)		ug/L	<0.01	0.21	1.6	<0.01	NR70
PFOSA (754-91-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70

REPORT OF ANALYSIS

Lab Reg No.			N21/010841	N21/010842	N21/010843	N21/010845	
Date Sampled			19-APR-2021	20-APR-2021	21-APR-2021	21-APR-2021	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)		ug/L	<0.01	<0.01	0.062	<0.01	NR70
8:2 FTS (39108-34-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)		%	105	110	95	111	NR70
PFPeA (Surrogate Recovery)		%	96	103	111	96	NR70
PFHxA (Surrogate Recovery)		%	114	109	86	107	NR70
PFHpA (Surrogate Recovery)		%	102	108	117	115	NR70
PFOA (Surrogate Recovery)		%	98	113	99	114	NR70
PFNA (Surrogate Recovery)		%	96	110	102	99	NR70
PFDA (Surrogate Recovery)		%	82	107	103	100	NR70
PFUdA (Surrogate Recovery)		%	75	97	105	93	NR70
PFDoA (Surrogate Recovery)		%	68	90	91	83	NR70
PFTeDA (Surrogate Recovery)		%	81	83	90	88	NR70
PFHxDA (Surrogate Recovery)		%	83	89	115	80	NR70
FOUEA (Surrogate Recovery)		%	70	90	98	83	NR70
PFBS (Surrogate Recovery)		%	92	98	97	103	NR70
PFHxS (Surrogate Recovery)		%	100	97	93	112	NR70
PFOS (Surrogate Recovery)		%	86	99	96	89	NR70
PFOSA (Surrogate Recovery)		%	86	91	81	81	NR70
N-MeFOSA (Surrogate Recovery)		%	67	73	95	65	NR70
N-EtFOSA (Surrogate Recovery)		%	77	75	71	81	NR70
N-MeFOSAA (Surrogate Recovery)		%	83	77	87	71	NR70
N-EtFOSAA (Surrogate Recovery)		%	89	77	96	72	NR70
N-MeFOSE (Surrogate Recovery)		%	90	86	76	97	NR70
N-EtFOSE (Surrogate Recovery)		%	74	100	80	95	NR70
4:2 FTS (Surrogate Recovery)		%	117	57	64	87	NR70
6:2 FTS (Surrogate Recovery)		%	71	66	90	70	NR70
8:2 FTS (Surrogate Recovery)		%	68	84	84	77	NR70
8:2 diPAP (Surrogate Recovery)		%	88	95	120	92	NR70
Dates							
Date extracted			4-MAY-2021	4-MAY-2021	4-MAY-2021	4-MAY-2021	
Date analysed			4-MAY-2021	4-MAY-2021	4-MAY-2021	4-MAY-2021	

REPORT OF ANALYSIS

Lab Reg No.			N21/010841	N21/010842	N21/010843	N21/010845	
Date Sampled			19-APR-2021	20-APR-2021	21-APR-2021	21-APR-2021	
		Units					Method

[redacted], Analyst
Organics - NSW
Accreditation No. 198

05-MAY-2021

NATA
ACCREDITED FOR TECHNICAL COMPETENCE

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

This Report supersedes reports: *RN1313028*

Measurement Uncertainty is available upon request.
Chemical Accreditation 198: 105 Delhi Road, North Ryde, NSW, 2113

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/201428/1 **Sample Matrix:** Solid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		mg/kg	mg/kg	mg/kg	mg/kg	%	%	%
PFBA (375-22-4)	NR70	0.002	<0.002	NA	NA	NA	118	NA
PFPeA (2706-90-3)	NR70	0.002	<0.002	NA	NA	NA	96	NA
PFHxA (307-24-4)	NR70	0.001	<0.001	NA	NA	NA	96	NA
PFHpA (375-85-9)	NR70	0.001	<0.001	NA	NA	NA	96	NA
PFOA (335-67-1)	NR70	0.001	<0.001	NA	NA	NA	93	NA
PFNA (375-95-1)	NR70	0.001	<0.001	NA	NA	NA	90	NA
PFDA (335-76-2)	NR70	0.001	<0.001	NA	NA	NA	100	NA
PFUdA (2058-94-8)	NR70	0.002	<0.002	NA	NA	NA	95	NA
PFDoA (307-55-1)	NR70	0.002	<0.002	NA	NA	NA	98	NA
PFTrDA (72629-94-8)	NR70	0.002	<0.002	NA	NA	NA	98	NA
PFTeDA (376-06-7)	NR70	0.002	<0.002	NA	NA	NA	82	NA
PFHxDA (67905-19-5)	NR70	0.002	<0.002	NA	NA	NA	101	NA
PFODA (16517-11-6)	NR70	0.005	<0.005	NA	NA	NA	106	NA
FOUEA (70887-84-2)	NR70	0.001	<0.001	NA	NA	NA	100	NA
PFBS (375-73-5)	NR70	0.001	<0.001	NA	NA	NA	107	NA
PFPeS (2706-91-4)	NR70	0.001	<0.001	NA	NA	NA	107	NA
PFHxS (355-46-4)	NR70	0.001	<0.001	NA	NA	NA	96	NA
PFHpS (375-92-8)	NR70	0.001	<0.001	NA	NA	NA	91	NA
PFOS (1763-23-1)	NR70	0.002	<0.002	NA	NA	NA	124	NA
PFNS (68259-12-1)	NR70	0.001	<0.001	NA	NA	NA	105	NA
PFDS (335-77-3)	NR70	0.001	<0.001	NA	NA	NA	98	NA
PFOSA (754-91-6)	NR70	0.001	<0.001	NA	NA	NA	94	NA
N-MeFOSA (31506-32-8)	NR70	0.002	<0.002	NA	NA	NA	107	NA
N-EtFOSA (4151-50-2)	NR70	0.002	<0.002	NA	NA	NA	114	NA
N-MeFOSAA (2355-31-9)	NR70	0.002	<0.002	NA	NA	NA	97	NA
N-EtFOSAA(2991-50-6)	NR70	0.002	<0.002	NA	NA	NA	107	NA
N-MeFOSE (24448-09-7)	NR70	0.005	<0.005	NA	NA	NA	64	NA
N-EtFOSE (1691-99-2)	NR70	0.005	<0.005	NA	NA	NA	112	NA
4:2 FTS (757124-72-4)	NR70	0.001	<0.001	NA	NA	NA	100	NA
6:2 FTS (27619-97-2)	NR70	0.001	<0.001	NA	NA	NA	114	NA
8:2 FTS (39108-34-4)	NR70	0.001	<0.001	NA	NA	NA	88	NA
10:2 FTS (120226-60-0)	NR70	0.002	<0.002	NA	NA	NA	86	NA
8:2 diPAP (678-41-1)	NR70	0.002	<0.002	NA	NA	NA	100	NA

Results expressed in percentage (%) or mg/kg wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

[redacted]
Organics Manager, NMI-North Ryde

Date: **5/05/2021**

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/210428/1 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
				N21/010845				
PFBA (375-22-4)	NR70	0.05	<0.05	<0.05	<0.05	-	95	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	<0.02	<0.02	-	92	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	<0.01	<0.01	-	94	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	<0.01	<0.01	-	88	NA
PFOA (335-67-1)	NR70	0.01	<0.01	<0.01	<0.01	-	91	NA
PFNA (375-95-1)	NR70	0.01	<0.01	<0.01	<0.01	-	84	NA
PFDA (335-76-2)	NR70	0.01	<0.01	<0.01	<0.01	-	89	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	<0.01	<0.01	-	98	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	<0.01	<0.01	-	93	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	<0.02	<0.02	-	90	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	<0.02	<0.02	-	92	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	<0.02	<0.02	-	97	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	<0.05	<0.05	-	96	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	<0.01	<0.01	-	95	NA
PFBS (375-73-5)	NR70	0.01	<0.01	<0.01	<0.01	-	95	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	<0.01	<0.01	-	94	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	<0.01	<0.01	-	93	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	<0.01	<0.01	-	87	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	<0.02	<0.02	-	99	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	<0.01	<0.01	-	98	NA
PFDS (335-77-3)	NR70	0.01	<0.01	<0.01	<0.01	-	98	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	<0.01	<0.01	-	89	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	<0.02	<0.02	-	98	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	<0.02	<0.02	-	94	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	<0.01	<0.01	-	107	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	<0.01	<0.01	-	93	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	<0.05	<0.05	-	89	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	<0.05	<0.05	-	74	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	<0.01	<0.01	-	96	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	<0.01	<0.01	-	96	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	<0.01	<0.01	-	92	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	<0.01	<0.01	-	91	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	<0.02	<0.02	-	93	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

[redacted]
Organics Manager, NMI-North Ryde

Date: **5/05/2021**

Appendix F

Equipment Calibration Certificates

Appendix F Equipment Calibration Certificates

EQUIPMENT CERTIFICATION REPORT

KENNARDS HIRE

PGN9003871 WATER QUALITY METER – MULTIFUNCTION (YSI PRO-PLUS)

Plant Number: 1072179

SENSOR	CONCENTRATION	SPAN 1	SPAN 2	TRACEABILITY	PASS
pH	pH 7.00 / pH 4.00	7.00 pH	4.00 pH	355722 357330	✓
Conductivity	2.76 mS/cm @ 25° C	2.76 mS/cm		345199	✓
Dissolved Oxygen	Sodium Sulphite / Air	0.0% in Sodium Sulphite	% Saturation in Air	10640	✓
ORP	240mV @ 25°C	240mV	-	5235	✓

Battery Status 100 %	Temperature 20.5 °C
	Electrodes Cleaned and Checked

Note: Calibration solution traceability information is available upon request.

Please clean/decontaminate instrument and accessories before returning. A minimum 'Cleaning Fee' $55.00 (Inc GST) may apply if instrument is returned contaminated.

Checked By: [redacted] Date: 25/3/21 Signed [redacted]

Accessories List:

User's Manual & USB	pH Sensor	Conductivity Sensor
Dissolved Oxygen Sensor with Wetting Cap	Redox (ORP) Sensor with Wetting Cap	Flow Cell 500ml
Comm Cable	Testing Cap	Storage Cap

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 18J104327

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
2. pH 7.00		pH 7.00		364212	pH 6.99
3. pH 4.00		pH 4.00		362201	pH 3.99
4. mV		231mV		364217/362918	231mV
5. EC		2760uS		343511	2707uS
6. D.O		0.00ppm		10959	0.00ppm
7. Temp		25.2°C		MultiTherm	24°C

Calibrated by: [redacted]

Calibration date: 12/04/2021

Next calibration due: 12/05/2021

Oil / Water Interface Meter

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Instrument Interface Meter (100M)
Serial No. 348900

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: [redacted]

Calibration date: 6/04/2021

Next calibration due: 5/06/2021

Oil / Water Interface Meter

Instrument Interface Meter (60M)
Serial No. 312450

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: [redacted]

Calibration date: 13/04/2021

Next calibration due: 12/06/2021

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP Amberley	**Project Number:**	60612563 3.1
Project Location:	RAAF Amberley	**Client:**	DoD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Hinet
Make and Model:	YSI Pro Plus
Serial Number:	18J104327

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	12/4/21 Acidity		Conductivity	Dissolved Oxygen	ORP
Units	pH	pH	µS/cm	~~ppm~~ %	~~ppm~~ mV
Calibration Standard Concentration:	7.00	4.00	2602	100	235.6
Calibration Reading:	7.11	3.88	2637	101.9	237.3
Calibration Temperature:	22.3	22.2	22.2	22.5	22.5

ONGOING CHECKS

Calibrated

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — Fieldwork Staff Signature

12/4/21 — Date

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP Amberley	**Project Number:**	60612563 3.1
Project Location:	RAAF Amberley	**Client:**	DoD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Ormet
Make and Model:	YSI ProPlus
Serial Number:	18S104327

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	13/04/21				
Parameter	Acidity		Conductivity	Dissolved Oxygen	ORP
Units	pH	pH	µS/cm	~~ppm~~ %	~~ppm~~ mV
Calibration Standard Concentration:	7.00	4.00	2707	100	229
Calibration Reading:	6.85	3.83	2362	91.3	236.8
Calibration Temperature:	24.6	24.4	24.3	24.7	24.5

ONGOING CHECKS

Calibrated Calibrated Calibrated Calibrated Calibrated

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]

Fieldwork Staff Signature

13/4/21

Date

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP Amberley	**Project Number:**	60612563 3.1
Project Location:	RAAF Amberley	**Client:**	DoD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Airnet
Make and Model:	YSI Pro Plus
Serial Number:	18S104327

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	14/4/21				
Parameter	Acidity		Conductivity	ORP / Dissolved Oxygen	
Units	pH	pH	µS/cm	mV / ppm	~~ppm~~ %
Calibration Standard Concentration:	7.00	4.00	2655	238.4	100
Calibration Reading:	7.19	3.87	2602	222.0	101.7
Calibration Temperature:	22.4	22.4	23.	22.5	22.1

ONGOING CHECKS

Calibrated

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]
Fieldwork Staff Signature

14/4/21
Date

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP Amberley	**Project Number:**	60612563 3.1
Project Location:	RAAF Amberley	**Client:**	DoD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Airmet
Make and Model:	YSI ProPlus
Serial Number:	15104527

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	5/4/21				
Parameter	Acidity		Conductivity	ORP	Dissolved Oxygen
Units	pH	pH	µS/cm	~~ppm~~ mV	~~ppm~~ %
Calibration Standard Concentration:	7.00	4.00	2665	233.4	100
Calibration Reading:	7.19	3.90	2647	232.3	100.2
Calibration Temperature:	23.3	23.2	23.2	23.3	94.8

ONGOING CHECKS

Calibrated

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]

Fieldwork Staff Signature

5/4/21

Date

Distribution: Project Central File

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP Amberley	**Project Number:**	60612563 3.1
Project Location:	RAAF Amberley	**Client:**	DoD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Aicmet
Make and Model:	18510432 7
Serial Number:	YSI PROPLUS

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	19/4/21				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	7.00	4.00	2581	235.6	100
Calibration Reading:	7.05	3.86	2536	239.6	99.1
Calibration Temperature:	21.6	21.6	21.6	21.6	21.4

ONGOING CHECKS

Calibrated

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]

Fieldwork Staff Signature **Date**

Distribution: Project Central File

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP Amberley	**Project Number:**	60612563 3.1
Project Location:	RAAF Amberley	**Client:**	DoD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Aquila
Make and Model:	YSI pro plus
Serial Number:	18510427

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	ORP ↓ Dissolved Oxygen	
Units	pH	pH	µS/cm	~~ppm~~ mV	↘ ~~ppm~~ %
Calibration Standard Concentration:	7.00	4.00	2602	233.4	100
Calibration Reading:	7.02	3.87	2619	231.7	95.4
Calibration Temperature:	22.5	22.5	22.4	22.6	23.7

ONGOING CHECKS

Calibrate

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]

Fieldwork Staff Signature

20/4/21

Date

Distribution: Project Central File

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP Amberley	**Project Number:**	60612563 3.1
Project Location:	RAAF Amberley	**Client:**	DoD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Aironet
Make and Model:	YSI ProPlus
Serial Number:	15J104327

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	ORP Dissolved Oxygen	
Units	pH	pH	µS/cm	~~ppm~~ mV	~~ppm~~ %
Calibration Standard Concentration:	7.00	4.00	2660	255.4	100
Calibration Reading:	7.10	4.08	2596	232.1	103
Calibration Temperature:	23.2	23.2	23.1	23.1	23.5

ONGOING CHECKS

Calibrated

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]

Fieldwork Staff Signature

21/4/21

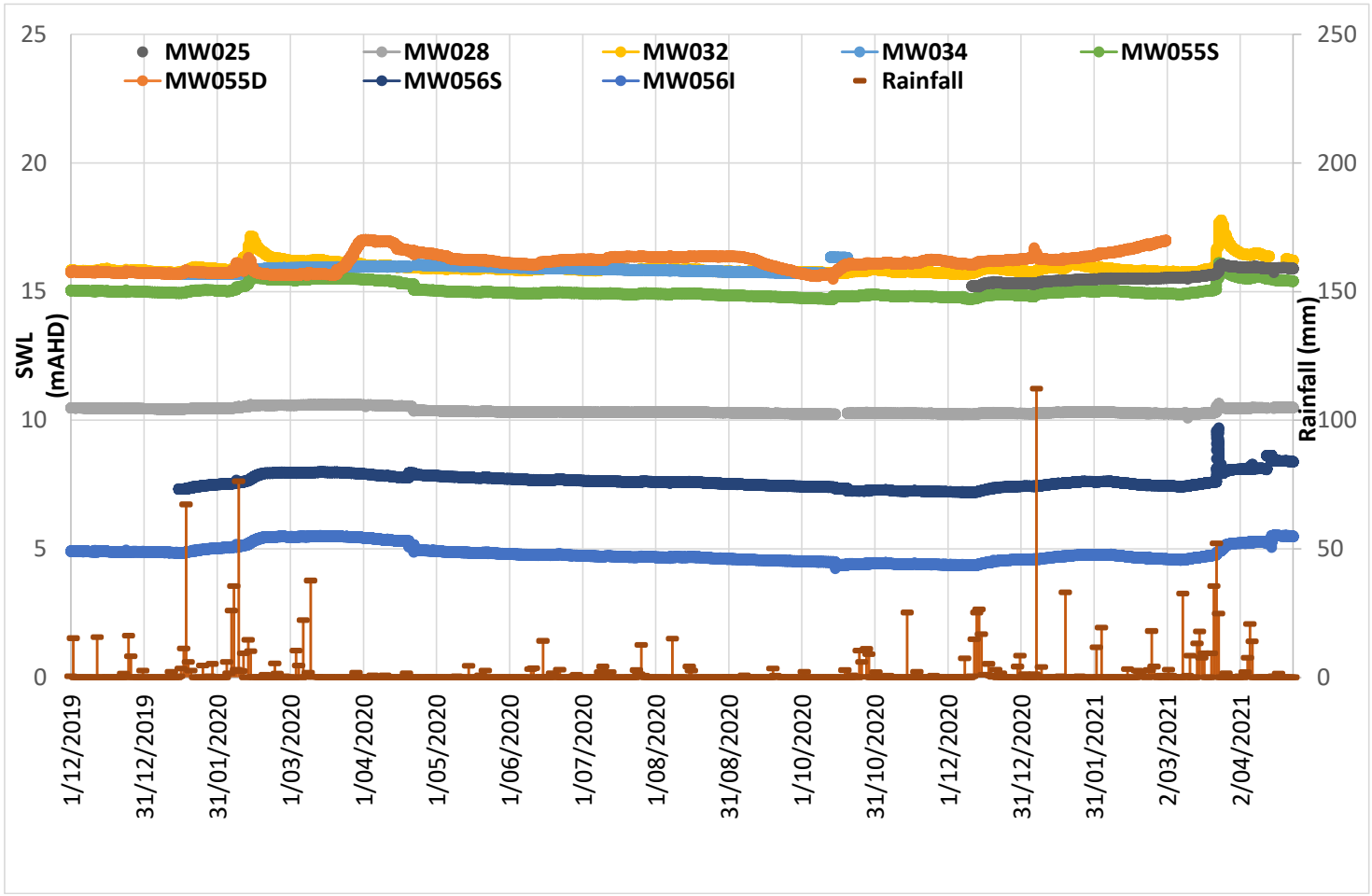
Date

Distribution: Project Central File

Appendix G

Groundwater Level Data

Appendix G Groundwater Level Data


MW025
MW028
MW032
MW034
MW055S
MW055D
MW056S
MW056I
Rainfall
SWL (mAHD)
Rainfall (mm)
25
20
15
10
5
0
250
200
150
100
50
0
1/12/2019
31/12/2019
31/01/2020
1/03/2020
1/04/2020
1/05/2020
1/06/2020
1/07/2020
1/08/2020
31/08/2020
1/10/2020
31/10/2020
1/12/2020
31/12/2020
31/01/2021
2/03/2021
2/04/2021

Prepared for
Department of Defence
ABN: 68706814312

AECOM

Sampling Event Factual Report, October 2021

PFAS OMP - RAAF Base Amberley

27-Oct-2023
Doc No. 60612563_RP_042_2_231027

aecom.com

Delivering a better world

Sampling Event Factual Report, October 2021

PFAS OMP - RAAF Base Amberley

Client: Department of Defence

ABN: 68706814312

Prepared by

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Turrbal and Jagera Country, Level 8, 540 Wickham Street, PO Box 1307, Fortitude Valley QLD 4006, Australia
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27-Oct-2023

Job No.: 60612563

Quality Information

Document	Sampling Event Factual Report, October 2021
Ref	60612563
Date	27-Oct-2023
Prepared by	[redacted]
Reviewed by	[redacted]

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
A	01-Dec-2021	Draft for Client Review	[redacted] Project Manager	
B	10-Jan-2022	Draft for Client Review	[redacted] Project Manager	
0	17-Jan-2022	Final	[redacted] Project Manager	
1	14-Feb-2022	Final	[redacted] Project Manager	
2	27-Oct-2023	Final	[redacted] Project Manager	[redacted]

Table of Contents

List of Tables (in Text)

List of Figures (in Appendix A)

List of Tables (in Appendix B)

Abbreviations

Abbreviation	
ALS	Australian Laboratory Services
ASC NEPM	Assessment of Site Contamination National Environment Protection Measure 1999 (as amended 2013)
COC	Chain of custody
CPSA	Confirmed primary source area
DCMM	Defence Contamination Management Manual
Defence	Department of Defence
DO	Dissolved oxygen
EC	Electrical conductivity
FTA	Firefighting training area
HEPA	Heads of Environmental Protection Agencies
IP	Interface probe
LNAPL	Light non aqueous phase liquid
LOR	Limit of reporting
mAHD	metres Australian height datum
mbtoc	Metres below top of casing
NATA	National Association of Testing Authorities
NEMP	National Environmental Management Plan
NHMRC	National Health and Medical Research Council
NMI	National Measurement Institute
OMP	Ongoing management plan
ORP	Oxidation reduction potential
PFAS	Per- and poly-fluorinated alkyl substances
PFHxS	Perfluorohexane sulfonate
PFOA	Perflurooctanoic acid
PFOS	Perflurooctanesulfonic acid
PMAP	PFAS management area plan
QA/QC	Quality assurance / quality control
RAAF	Royal Australian Air Force
QLD	Queensland
RPD	Relative percent difference
SAQP	Sampling analysis and quality plan
SWL	Standing water level

Units of Measurement			
L	Litres	m	Metre
mg	Milligram	ha	Hectares
kg	Kilogram	S	Siemens
mV	Millivolts	cm	Centimetre
µg	Microgram		

1.0 Introduction

1.1 General

AECOM Australia Pty Ltd (AECOM) has been engaged by the Department of Defence (Defence) to implement the per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Program (OMP) (Defence, 2020) at the Royal Australian Airforce (RAAF) Base Amberley (the 'Site') and the Management Area in the South Queensland Region. The locations of the Site and Management Area are shown on **Figure 1** in **Appendix A**.

The OMP for RAAF Base Amberley (Defence, 2020) includes the following sampling events:

- Biannual groundwater, surface water and sediment sampling in April and October in 2020, 2021, and 2022.

Following each biannual sampling event, sampling event factual reports will be prepared. Annual interpretative reports will be prepared following the completion of each 12-month sampling period. This sampling event factual report has been prepared to report the results of the biannual sampling event completed in October 2021, specifically highlighting first time detections and/or first-time exceedances of human health screening criteria for PFHxS+PFOS and / or PFOA.

This report has been prepared in accordance with the *PFAS OMP Factual Reports Guidance,* v 0.2, May 2021 (Defence, 2021).

1.2 Objectives

The objectives of the OMP are to:

- Implement the OMP prepared as part of the PFAS Management Area Plan (PMAP); and
- Collect data that will enable Defence to maintain an up to date understanding of the distribution, concentration and transport of PFAS at each property.

The data will assist in the timely identification of risks and inform Defence's approach to the management of PFAS, including updates and revisions to the PMAP.

The objective of this phase of works was to implement the scope of works for the October 2021 sampling event in accordance with the sampling analysis and quality plan (SAQP) (AECOM, 2021a).

2.0 Scope of Work

The sampling event at RAAF Base Amberley was completed in general accordance with the SAQP (AECOM, 2021a). In summary, the scope of works for this sampling event included:

- Obtaining access to private properties where some groundwater sampling locations are situated.
- Review of the SAQP prior to the monitoring event to ensure compliance with the following:
  - PFAS National Environmental Management Plan (NEMP) (HEPA, 2020)
  - National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, as amended in 2013 (ASC NEPM, 2013)
  - Defence Routine Environment Water Quality Monitoring Manual
  - AS/NZ 5667:1998 Water quality – Sampling
  - Australian and New Zealand Guidelines for Fresh and Marine Water Quality; and
  - Relevant State regulatory guidelines.
- Gauging of groundwater elevation in all monitoring wells prior to collection of samples (refer to **Table 1** below, and **Figure 2** in **Appendix A** for specific locations).
- Collection of groundwater samples at 46 locations including 40 on-Site monitoring wells and six off-Site monitoring well locations. Details are included in **Table 1** below and **Figure 2** in **Appendix A**. Groundwater samples from six monitoring wells could not be collected during this sampling event. Refer to **Table 8** for more details.
- Collection of co-located surface water and sediment samples at 49 locations, including 42 on-Site locations, and seven off-Site locations (refer below to **Table 2** and **Table 3** and **Figure 3** in **Appendix A**). It is noted that one surface water sample could not be collected during this sampling event. Refer to **Table 8** for more details.
- Downloading groundwater level data from data loggers installed in seven groundwater monitoring wells (MW025, MW028, MW032, MW055S, MW055D, MW056S, MW056I), refer to **Figure 2** in **Appendix A** for data logger locations.
- Collection of intra- and inter- laboratory duplicate samples at a rate of 1 in 10 primary samples, one field blank sample per day, one rinsate sample per fieldwork day and one trip blank per batch.
- Analysis of all samples for the PFAS suite at the standard limit of reporting (LOR).
- Data management of all OMP field and laboratory data in the Defence ESdat database.
- Preparation of results letters for off-Site stakeholders.
- Preparation of this Sampling Event Factual Report.

Table 1 Groundwater Sampling Locations

Location		Monitoring Wells
Source Areas	Former Topside Aviation Fire Training Area (FTA) and current FTA Fire Pad (Confirmed Primary Source Area [CPSA] A)	MW002, MW008, MW009, MW033, MW039, MW040
	B Hangar 410 and Former Landfill	MW047
	Frogs Hollow Former Fire Training School Location (CPSA B)	MW037
	Sewage Treatment Plant (CPSA D)	MW021, MW032
	Historical Containment Pond (CPSA E)	MW048
	Former Fire Training Area and Operational Testing Area (CPSA G)	MW050
	Former Fire Training Area and Operational Testing Area (CPSA J)	MW005
	Potential Former Fire Training Area and Operations Test Area (CPSA L)	MW006, MW023, MW028, MW029, MW036
	Former Fuel Farm 1 and Triple Interceptor Pit (CPSA M)	MW056, MW309
	Potential Location of Aircraft F-4E Incident (CPSA T)	MW035
	AFFF Wastewater Holding Tank (CPSA V)	MW046
	Fire Fighting Training School (CPSA W)	MW026, MW030, WM031, MW042, MW043
	Former Structural and Open Pit Fire Training Area and Former Secondary Fire Training Area (CPSA X and Y)	MW015, MW041
	Fuel UST with AFFF listing (CPSA Z)	MW020
	Triple Interceptor Pits at Engine Test Cell Facilities 1 and 2 (CPSA AA)	MW007
	Areas used for irrigation – former grassed runways (CPSA BB)	MW012
	Former Landfill (CPSA CC)	MW022
	Former Fire Training Area on Disused Runway (CPSA DD)	MW049
Off-Site Warrill Creek		*MW054S, MW054D,* MW057S, MW057I
On-Site Bremer River		MW024, MW025, MW034, MW044, MW055S, MW055D
Off-Site Bremer River		MW056S, MW056I

Note: *Italics* indicates that the well is located on private property.
Wells with S, D or I are adjacent monitoring wells that are screened in different aquifers. 'S' indicates the well is screened in the shallow aquifer, 'D' or 'I' indicates the well is screened in the deeper aquifer. MW056I and MW057I were previously known as MW056D and MW057D.
MW002 was formerly known as MW2. MW056 was formerly known as MW002.

Table 2 Surface Water Sampling Locations

Area	Surface Water Sampling Locations	Number of Locations
On-Base Drains	SW002, SW003, SW008, SW011, SW021, SW027, SW028, SW030, SW033, SW037, SW038, SW041, SW048, SW049, SW053, SW056, SW059, SW064, SW067, SW076, SW079, SW080	22
Warrill Creek	SW004, SW005, SW009, SW015, SW016, SW018, SW020, SW026*, SW034, SW043*, SW099, SW100	12
Bremer River	SW025*, SW036, SW039*, SW040*, SW045*, SW047, SW050, SW051, SW052, SW088, SW089, SW090, SW091, SW094, SW098*	15

Note: * denotes off-Site sampling location.

Table 3 Sediment Sampling Locations

Area	Sediment Sampling Locations	Number of Locations
On-Base Drains	SD002, SD003, SD008, SD011, SD021, SD027, SD028, SD030, SD033, SD037, SD038, SD041, SD048, SD049, SD053, SD056, SD059, SD079, SD064, SD067, SD076, SD080	22
Warrill Creek	SD004, SD005, SD009, SD015, SD016, SD018, SD020, SD026*, SD034, SD043*, SD099, SD100	12
Bremer River	SD025*, SD036, SD039*, SD040*, SD045*, SD047, SD050, SD051, SD052, SD088, SD089, SD090, SD091, SD094, SD098*	15

Note: * denotes off-Site sampling location.

3.0 Methodology

The methodology used for the October 2021 sampling event was in accordance with the SAQP (AECOM, 2021a) and is summarised below. Deviations from the SAQP are discussed in **Section 3.6**.

3.1 Groundwater Sampling Methodology

The groundwater sampling methodology is outlined in **Table 4** below.

Table 4 Groundwater Sampling Methodology

Item	Details
Groundwater gauging	The depth to groundwater was measured in each monitoring well using an interface probe prior to the installation of HydraSleeves™, or if HydraSleeves were already installed, prior to retrieval of the HydraSleeve. Gauging was conducted in as short a time as possible, however, due to the number of wells and different requirements for accessing the monitoring well locations, the gauging took place over several days. Water level transducers are installed in seven monitoring wells to continuously record groundwater levels. A barometric logger is installed in MW028. Data collected since the previous OMP sampling event in March / April 2021 was downloaded.
Field parameters	Temperature, electrical conductivity (EC), dissolved oxygen (DO), oxidation-reduction potential (ORP), pH and observations of water quality were recorded for all groundwater samples.
Sampling methodology	Groundwater samples were collected from the majority of monitoring wells using no-purge methodology HydraSleeves™, which were installed within the screened interval of each well (based on a review of the well construction log) for a minimum of 24 hours prior to the sampling round. Once sampling was completed, new HydraSleeves™ were deployed at the screened interval depth in 18 of the monitoring wells in preparation for the next sampling round. HydraSleeves were not installed in 21 monitoring wells as they are regularly used for monitoring on other programs. There was insufficient groundwater in two wells (MW048 and MW049) for HydraSleeve sampling. The groundwater sample was collected using a disposable single use HDPE ecobailer.
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), field blanks, rinsate samples and trip blanks. Refer to **Appendix C** for assessment of QA/QC sample data. Equipment calibration certificates are presented in **Appendix F**.
Sample analysis	All primary samples were submitted for analysis for the PFAS suite using the standard levels of detection. ALS Environmental (ALS) Brisbane, Queensland was used as the primary laboratory. The National Measurement Institute (NMI) of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for groundwater analyses are certified by the National Association of Testing Authorities (NATA). Chain of custody (COC) forms are presented in **Appendix D**, laboratory analytical certificates are presented in **Appendix E**.

3.2 Surface Water Sampling Methodology

The methodology used for the October 2021 sampling event was in accordance with the SAQP (AECOM, 2021a) and is summarised in **Table 5** below.

Table 5 Surface Water Sampling Methodology

Item	Details
Field parameters	Temperature, electrical conductivity, dissolved oxygen, oxidation-reduction potential, pH and observations of water quality were recorded for all surface water samples.
Sample Collection Methodology	Samples were collected from immediately below the water surface to minimise collection of sediment or floating materials in the samples. At each location, a new, laboratory supplied container was lowered into the water with the cap immediately applied once the container was full.
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), field blanks, rinsate samples and trip blanks. Refer to **Appendix C** for assessment of QAQC sample data. Equipment calibration certificates are presented in **Appendix F**.
Sample analysis	All primary samples were submitted for PFAS suite using the standard levels of detection. ALS Brisbane, Queensland was used as the primary laboratory. NMI of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for groundwater analyses were certified by the NATA. Chain of custody forms are presented in **Appendix D**, laboratory analytical certificates are presented in **Appendix E**.

3.3 Sediment Sampling Methodology

The methodology used for the October 2021 sampling event was in accordance with the SAQP (AECOM, 2021a) and is summarised in **Table 6** below.

Table 6 Sediment Sampling Methodology

Item	Details
Sample Collection Methodology	Samples representative of potentially deposited sediments were collected from within the water body where possible. Sediment samples were collected by hand using new laboratory supplied nitrile gloves and a new laboratory supplied container at each location.
Logging	Sediment characterisation were recorded for each sample.
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), field blanks, rinsate samples and trip blanks. Refer to **Appendix C** for assessment of QAQC sample data. Equipment calibration certificates are presented in **Appendix F**.
Sample analysis	All primary samples were submitted for PFAS suite using the standard levels of detection. ALS Brisbane, Queensland was used as the primary laboratory. NMI of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for groundwater analyses were certified by the NATA. Chain of custody forms are presented in **Appendix D**, laboratory analytical certificates are presented in **Appendix E**.

3.4 Adopted Screening Criteria

Adopted screening criteria references national guidance in the form of the PFAS National Environmental Management Plan, Defence estate and environmental strategies, and Defence PFAS-specific strategies and guidance. Guidance documents used to assess the dataset includes the following:

- PFAS NEMP, (HEPA, 2020)
- Department of Health, 2019. *Health Based Guidance Values for PFAS for use in site investigations in Australia,* September 2019
- National Health and Medical Research Council (NHMRC), 2019. Guidance on PFAS in Recreational Water, August 2019 (NHMRC, 2019)
- National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, as amended in 2013 (ASC NEPM, 2013).

In accordance with the OMP (Defence, 2020) and SAQP (AECOM, 2021a), the adopted PFAS screening criteria to assess the data generated as part of the OMP are presented in **Table 7** below.

Table 7 Summary of Adopted Screening Criteria

Pathway	Compound	Criteria	Comment / Reference
Human Health Receptors			
Drinking water - groundwater	PFOS + PFHxS	0.07 µg/L	The values are from the PFAS NEMP (HEPA, 2020). *All groundwater results will be compared to these criteria.*
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	The values are from NHMRC (2019). *All surface water results will be compared to these criteria.*
	PFOA	10 µg/L	
Ecological Receptors			
Freshwater (95% species protection values)	PFOS	0.13 µg/L	*The values are from the PFAS NEMP* (HEPA, 2020). *All surface water and groundwater results will be compared to these criteria.*
	PFOA	220 µg/L	
Freshwater (99% species protection values)	PFOS	0.00023 µg/L	
	PFOA	19 µg/L	

There are no current HEPA (2020) endorsed human health or ecological guideline values available for PFAS in sediment.

3.5 Data Quality Objectives and Data Validation

The data quality objectives and data quality indicators adopted for these works are presented in the SAQP (AECOM, 2021a).

Data validation assessment is provided in **Appendix C**. Data validation procedure employed in the assessment of the field and laboratory QA/QC data indicated that the reported analytical results are

representative of the sample locations and that the overall quality of the analytical data produced is acceptably reliable for the purpose of this report.

All data collected during this event has been reviewed and uploaded to the Defence ESdat database in accordance with Defence Contamination Management Manual (Defence, 2018) Annex L Guidance on Data Management (amended 2019) requirements.

3.6 Deviations from the SAQP

Table 8 lists the deviations from the SAQP (AECOM, 2021a) during this sampling event.

Table 8 Deviations from the SAQP during sampling event for October 2021

SAQP	October 2021 Sampling Event
Collection of groundwater samples at 46 locations	• Groundwater samples were not collected from four monitoring wells MW056, MW015, MW039, MW040, as they have been destroyed during construction of new infrastructure. • Groundwater samples were not collected from two monitoring wells MW008 and MW009 as they were blocked or damaged preventing sampling equipment from being installed. There was an unidentified obstruction in MW008 and bent/broken casing at MW009. Monitoring wells MW056, MW008, MW009, MW039, MW040 were located close to and down-gradient of CPSA A (Former Topside Aviation FTA and current FTA pad), M (Fuel Farm 1) and N (Fire Station). Monitoring well MW015 was located close to the Former Structural and Open Pit FTA and Former Secondary FTA (CPSA X and Y). Due to the loss of these monitoring wells, the extent of PFAS in groundwater down-gradient of these CPSAs is not well defined.
Collection of surface water samples at 49 locations	• A sample was not collected from SW048 as this location was dry.
Collection of groundwater samples from monitoring wells using no-purge HydraSleeves™	• The groundwater sample from monitoring wells MW048 and MW049 were collected via a grab sample using a decontaminated bailer due to insufficient water column for HydraSleeve sampling.
Collection of groundwater quality parameter field measurements.	• Quality parameters for groundwater at MW031 were inadvertently not collected prior to sampling of the well.
Download of data from the datalogger in MW055D.	• Data could not be downloaded as the data logger appears to have malfunctioned and requires replacement.
Collection of field blanks each day of sampling.	• A field blank was collected each day of sampling during the sampling event between 19 and 28 October 2021. A field blank was inadvertently not collected during a resampling visit conducted on the 26 November 2021 to verify groundwater analytical results in two of the monitoring wells.

In addition, following review of the results, anomalies were noted for the groundwater samples from MW057S and MW057I (sampled on 22 October 2021) which had deviations from historical results. As it was considered likely that the samples had been inadvertently mislabelled during sample collection, the monitoring wells were resampled on 26 November 2021. The reported results were consistent with historical results and have superseded the results for the water samples collected on 22 October 2021.

4.0 Field Observations and Results

The October 2021 sampling event was completed between 19 and 28 October 2021 and 26 November 2021. Two wells were resampled on 26 November 2021 as described in **Section 3.6**. The results are summarised in following sections.

4.1 Groundwater

4.1.1 Groundwater Observations and Field Measurements

Table 9 Groundwater Observations and Field Measurements

Item	Details
Access	All monitoring wells were accessible except for the following: • On-Site monitoring wells MW015, MW039, MW040 and MW056 have been destroyed and could not be sampled. • On-Site monitoring wells MW008 and MW009 are blocked or damaged and were unable to be sampled.
Monitoring Well Network	The following five on-Site monitoring wells were noted to be damaged during the fieldworks: MW021 – gatic is cracked. The well was able to be sampled. MW031 – The ground surrounding the well has subsided causing the monument to sink. As a result, the lid cannot be closed. The well was able to be sampled. MW042 – The gatic concrete collar and lid had cracks. The well was able to be sampled. MW047 – The gatic concrete collar had cracks. The well was able to be sampled. MW050 – The gatic concrete collar, lid, and casing on MW050 had cracks. The well was able to be sampled.
Field Observations	Groundwater from four monitoring wells had a sulphur odour (MW042, MW046, MW047 and MW054D). Groundwater from four monitoring wells had an organic odour (MW056S, MW056I, MW057S, MW057I). No other visible or olfactory indications of contamination were observed during the sampling of the other monitoring wells. During the sampling of MW002 it was noted that the base of the well was clogged with a significant sediment load. Field observations are presented in **Table T1** in **Appendix B**.
Depth to Groundwater	Depth to groundwater in the Alluvium was between 3.84 and 15.62 metres below top of casing (mbtoc). Depth to groundwater in the Tertiary Formation was between 6.26 and 16.025 mbtoc. Depth to groundwater in the Walloon Coal Measures was between 6.27 and 24.255 mbtoc. Groundwater elevations in the Alluvium were between 8.275 and 17.787 mbtoc. Depth to groundwater in the Tertiary Formation was between 5.322 and 28.805 mbtoc. Depth to groundwater in the Walloon Coal Measures was between 15.566 and 36.362 mbtoc. Groundwater gauging data are presented in **Table T1** in **Appendix B**. Water level transducer results for seven monitoring wells are presented in **Appendix G**. The data logger in MW055D appears to have malfunctioned as the data could not be downloaded. The logger requires replacement.

<table>
<tr><th>Item</th><th>Details</th></tr>
<tr><td>Groundwater Flow Direction</td><td>Inferred groundwater contours and groundwater flow directions at the Site in October 2021 for the Alluvium/Tertiary Formation are shown on Figure 4 in Appendix A. The inferred local groundwater flow direction is towards the northeast and east in the direction of the Bremer River and Warrill Creek. The inferred flow direction is consistent with previous sampling events (AECOM, 2021b).</td></tr>
<tr><td>Groundwater Quality Parameter Field Measurements</td><td>Groundwater quality parameters were measured prior to collecting groundwater samples. The readings are presented in Table T1 in Appendix B and are summarised per geological unit in the table below:
<table>
<tr><th>Unit</th><th>Parameter</th><th>Min</th><th>Max</th><th>Comment</th></tr>
<tr><td rowspan="4">Alluvium</td><td>DO (mg/L)</td><td>0.43</td><td>2.4</td><td>Poor to moderately oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>262.9</td><td>9,645</td><td>Fresh to brackish</td></tr>
<tr><td>pH</td><td>6.61</td><td>7.71</td><td>Near neutral to slightly alkaline</td></tr>
<tr><td>ORP (mV)</td><td>130.7</td><td>375.8</td><td>Mildly to moderately reducing</td></tr>
<tr><td>Temperature (°C)</td><td>21</td><td>27.1</td><td>-</td></tr>
<tr><td rowspan="4">Tertiary Formation</td><td>DO (mg/L)</td><td>0.48</td><td>1.06</td><td>Poor to mildly oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>844</td><td>26,620</td><td>Brackish to saline</td></tr>
<tr><td>pH</td><td>6.68</td><td>7.27</td><td>Near neutral</td></tr>
<tr><td>ORP (mV)</td><td>128</td><td>321.7</td><td>Mildly to moderately reducing</td></tr>
<tr><td>Temperature (°C)</td><td>22.9</td><td>29.3</td><td>-</td></tr>
<tr><td rowspan="4">Walloon Coal Measures</td><td>DO (mg/L)</td><td>0.35</td><td>0.91</td><td>Poor to mildly oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>279.2</td><td>22,594</td><td>Fresh to saline</td></tr>
<tr><td>pH</td><td>6.68</td><td>7.6</td><td>Near neutral</td></tr>
<tr><td>ORP (mV)</td><td>157.7</td><td>328.5</td><td>Mildly to moderately reducing</td></tr>
<tr><td>Temperature (°C)</td><td>22.4</td><td>27.0</td><td>-</td></tr>
</table>
The measured parameter ranges are consistent with previous sampling event results (AECOM 2021b).</td></tr>
<tr><td>Weather Conditions</td><td>Weather conditions during groundwater sampling were generally hot and dry with periods of overcast weather. A total of 57.2 mm of rainfall was recorded during the sampling period from 19 – 28 October 2021 (Bureau of Meteorology (BOM) station 040004 – ‘Amberley AMO).</td></tr>
<tr><td>Estate Management Works or Training Activities</td><td>During the sampling event no notable estate works or training activities were observed in the vicinity of sampling locations which may have had a material impact upon the sampling event and analytical data.</td></tr>
</table>

4.1.2 Groundwater Analytical Results

The groundwater analytical results for PFAS from this sampling event are presented in **Table T2** in **Appendix B**. There were no first-time exceedances of the human health drinking water guideline value. There was one first time detection of PFOA in the sample from MW043 (0.02 µg/L). This is recorded in **Table 10** below and displayed on **Figure 5, Appendix A**.

Concentrations of sum of PFHxS and PFOS in 20 of the 40 groundwater samples exceeded the drinking water guideline value with eight samples exceeding the PFOA guideline.

All 25 groundwater samples that exceeded the limit of reporting exceeded the ecological guideline for PFOS for 99% protection of ecosystems with 15 of these samples also exceeding the 95% protection guideline value. One groundwater sample (MW046) exceeded the PFOA ecological guideline for 99% protection of freshwater species but this sample did not exceed the 95% protection guideline.

Table 10 First-time detections or exceedances of sum of PFHxS+PFOS or PFOA in groundwater

First time detection / exceedance	Ground-water Sampling location	Sum of PFHxS+PFOS concentration (µg/L)		PFOA concentration (µg/L)	
		October 2021	Historical maximum	October 2021	Historical maximum
First time detections of PFHxS+PFOS or PFOA in groundwater	MW043	0.49	0.15	0.02	<0.01

Note: Blue shading indicates a sample with a first-time detection of PFOS+PFHxS or PFOA
Yellow shading indicates a sample with a first time exceedance above human health drinking water guideline values (refer to **Table 7**).

The first-time detection of PFOA in the sample from MW043 marginally exceeded the laboratory limit and may be a false positive. PFAS is known to be present in groundwater at this location and sum of PFHxS and PFOS concentrations have been frequently detected during historical sampling events.

4.2 Surface Water

4.2.1 Surface Water Observations and Field Measurements

Table 11 Surface Water Observations and Field Measurements

<table>
<tr><th>Item</th><th>Details</th></tr>
<tr><td>Access</td><td>All surface water sampling locations were accessed during the sampling event, with the exception of SW048 that was dry. SW048 is a drain sampling location.</td></tr>
<tr><td>Field Observations</td><td>Eight surface water samples had an organic odour: SW008, SW021, SW030, SW033, SW037, SW041, SW056 and SW059.

Seven surface water samples had a sheen appearance: SW002, SW030, SW037, SW038, SW041, SW067 and SW080.

No visual or olfactory indications contamination were observed during the sampling of the other surface water sampling locations. Field observations are reported in Table T3, Appendix B.</td></tr>
<tr><td>Surface Water Quality Parameter Field Measurements</td><td>Surface water quality parameters were measured prior to collecting surface water samples. The readings are presented in Table T3 in Appendix B and are summarised below:
<table>
<tr><th>Unit</th><th>Parameter</th><th>Min</th><th>Max</th><th>Comment</th></tr>
<tr><td rowspan="4">Drain</td><td>DO (mg/L)</td><td>0.01</td><td>8.82</td><td>Poorly to well oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>141.3</td><td>728.0</td><td>Fresh</td></tr>
<tr><td>pH</td><td>6.26</td><td>8.32</td><td>Near neutral to slightly alkaline</td></tr>
<tr><td>ORP (mV)</td><td>95.7</td><td>330</td><td>Mildly to moderately reducing</td></tr>
<tr><td>Temperature (°C)</td><td>19.0</td><td>29.7</td><td>-</td></tr>
<tr><td rowspan="4">Warrill Creek</td><td>DO (mg/L)</td><td>1.88</td><td>6.91</td><td>Mildly to well oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>326</td><td>869</td><td>Fresh</td></tr>
<tr><td>pH</td><td>6.76</td><td>7.57</td><td>Near neutral</td></tr>
<tr><td>ORP (mV)</td><td>307.2</td><td>353.8</td><td>Moderately reducing</td></tr>
<tr><td>Temperature (°C)</td><td>19.7</td><td>24.5</td><td>-</td></tr>
<tr><td rowspan="4">Bremer River</td><td>DO (mg/L)</td><td>2.30</td><td>4.27</td><td>Mildly to well oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>168.1</td><td>804</td><td>Fresh</td></tr>
<tr><td>pH</td><td>6.59</td><td>7.36</td><td>Near neutral to slightly alkaline</td></tr>
<tr><td>ORP (mV)</td><td>262.8</td><td>345.5</td><td>Moderately reducing</td></tr>
<tr><td>Temperature (°C)</td><td>19.3</td><td>22.7</td><td>-</td></tr>
</table>
The measured parameter ranges are consistent with previous sampling event results (AECOM 2021b).</td></tr>
<tr><td>Weather Conditions</td><td>Weather conditions during groundwater sampling were generally hot and dry with periods of overcast weather. A total of 57.2 mm of rainfall was recorded during the sampling period from 19 – 28 October 2021 (Bureau of Meteorology (BOM) station 040004 – ‘Amberley AMO).</td></tr>
<tr><td>Estate Management Works or Training Activities</td><td>During the sampling event no notable estate works or training activities were observed in the vicinity of sampling locations which may have had a material impact upon the sampling event and analytical data.</td></tr>
</table>

4.2.2 Surface Water Analytical Results

The analytical results for PFAS in surface water from this sampling event are presented in **Table T4** in **Appendix B**. There were no first-time detections of PFHxS+PFOS and PFOA or first-time exceedances of the adopted human health or ecological guidelines compared to the historical dataset.

Concentrations of sum of PFHxS and PFOS in 12 of the 48 surface water samples exceeded the recreational water guideline value with none of the samples exceeding the PFOA guideline. All 34 surface water samples that exceeded the limit of reporting exceeded the ecological guideline for PFOS for 99% protection of ecosystems with 21 of these samples also exceeding the 95% protection guideline value. None of the samples exceeded the PFOA ecological guidelines for either 95% or 99% protection of freshwater species.

4.3 Sediment

4.3.1 Sediment Observations and Field Measurements

Table 12 Sediment Observations

Item	Details
Access	All sediment sample locations were accessible.
Field Observations	Sediment logging data are presented in **Table T5** in **Appendix B**. No visible or olfactory indications of contamination were observed during sampling at the sediment sampling locations.
Weather Conditions	Weather conditions during groundwater sampling were generally hot and dry with periods of overcast weather. A total of 57.2 mm of rainfall was recorded during the sampling period from 19 – 28 October 2021 (Bureau of Meteorology (BOM) station 040004 – 'Amberley AMO).
Estate Management Works or Training Activities	During the sampling event no notable estate works or training activities were observed in the vicinity of sampling locations which may have had a material impact upon the sampling event and analytical data.

4.3.2 Sediment Analytical Results

The analytical results for PFAS in sediment from this sampling event are presented in **Table T6** in **Appendix B**. First-time detections from the historical dataset are recorded in **Table 13** below. The result is displayed on **Figure 6, Appendix A**. The detection of PFOA for the first-time in samples SD004 and SD045 are not considered of significance as the concentrations of PFOA marginally exceeded the limit of reporting and other PFAS (PFHxS and PFOS) have been consistently detected at these sampling location during the OMP sampling events.

Table 13 First-time detections of sum of PFHxS+PFOS or PFOA in sediment

First time detection / exceedance	Sediment sampling location	Sum of PFHxS+PFOS concentration (mg/kg)		PFOA concentration (mg/kg)	
		October 2021	Historical maximum	October 2021	Historical maximum
First time detections of PFHxS+PFOS or PFOA in sediment	SD004	0.0051	0.0174	0.0003	<0.0002
	SD045	0.0028	0.0044	0.0002	<0.0002

Note: Blue shading indicates a sample with a first-time detection of PFOS+PFHxS or PFOA

5.0 Summary and Next Sampling Event

5.1 Summary of Monitoring Event

A groundwater, surface water and sediment monitoring event was completed within the RAAF Base Amberley Management Area between 19 and 28 October 2021. The program included sampling of groundwater from 46 monitoring wells and 49 co-located surface water and sediment sampling locations. Forty of the monitoring wells, and 48 of the surface water locations and all 49 sediment locations were able to be sampled.

Table 14 summarises the findings of the October 2021 sampling event and the recommended actions.

Table 14 Summary of Sampling Event

Item	Comment	Recommended Actions
Access to sampling locations	A total of 40 out of the 46 monitoring wells were accessible. Four on-Site wells (MW015, MW039, MW040, MW056) have been destroyed during construction of new infrastructure. Two on-Site wells were damaged and could not be sampled (MW008 and MW009). The loss of these monitoring wells has the potential to impact the understanding of the distribution of PFAS in groundwater. All surface water sampling locations were accessed during the sampling event with the exception of one on-Site drain sampling location (SW048) which was dry. All sediment sampling locations were accessible.	The interpretative report (AECOM, 2021b) has recommended the installation of five new monitoring wells to replace destroyed/damaged wells. Defence has advised that the installation of new wells will be considered during the PMAP review planned for 2022. Sampling of on-Site drains should continue to be timed to occur after a rainfall event.
Groundwater level loggers	The groundwater level logger deployed in MW055D appears to have failed.	Deployment of a new logger in MW055D.
Monitoring well network condition	No issues were identified in 35 out of the 40 monitoring wells sampled. Slight damage was observed to five monitoring wells which have cracked gatic collars or lids. These were MW021, MW031, MW042, MW047, MW050. During sampling of MW002 it was noted that the base of the well was clogged with a significant sediment load.	Minor repairs are required to these monitoring wells, which should be addressed during the drilling of the replacement wells. MW002 should be re-developed before the next sampling event.
Analytical Results	PFAS concentrations in 39 of the 40 groundwater samples were consistent with historical results. PFAS concentrations in all 48 surface water samples collected were consistent with historical results. PFAS concentrations in 48 of the 49 sediment samples were consistent with historical results.	Ongoing monitoring in accordance with the OMP.
First-time detections of Sum	One first-time detection of PFAS above the laboratory limit of reporting was recorded in the groundwater sample from MW043 with PFOA	Ongoing monitoring in accordance with the OMP.

Item	Comment	Recommended Actions
of PFHxS and PFOS or PFOA	detected at a concentration slightly above the laboratory limit of reporting. No first-time detections of PFAS above the laboratory limit of reporting were recorded in any of the surface water samples collected. Two of the 49 sediment samples recorded a first-time detection of PFOA (SD004 and SD045), at concentrations slightly above the limit of reporting. Other PFAS compounds have been detected in samples from SD004 and SD045.	
First time exceedance of NEMP drinking water guideline values	No first-time exceedances of the NEMP drinking water guideline values were recorded.	Ongoing monitoring in accordance with the OMP.

5.2 Upcoming Sampling Events

The next biannual sampling event is scheduled for March / April 2022.

5.3 Upcoming Annual Interpretive Report

The next annual interpretative report is scheduled for May 2022.

6.0 References

AECOM, 2021a. *PFAS OMP- RAAF Base Amberley Sampling and Analysis Quality Plan*, Final Rev 2, 08 March 2021.

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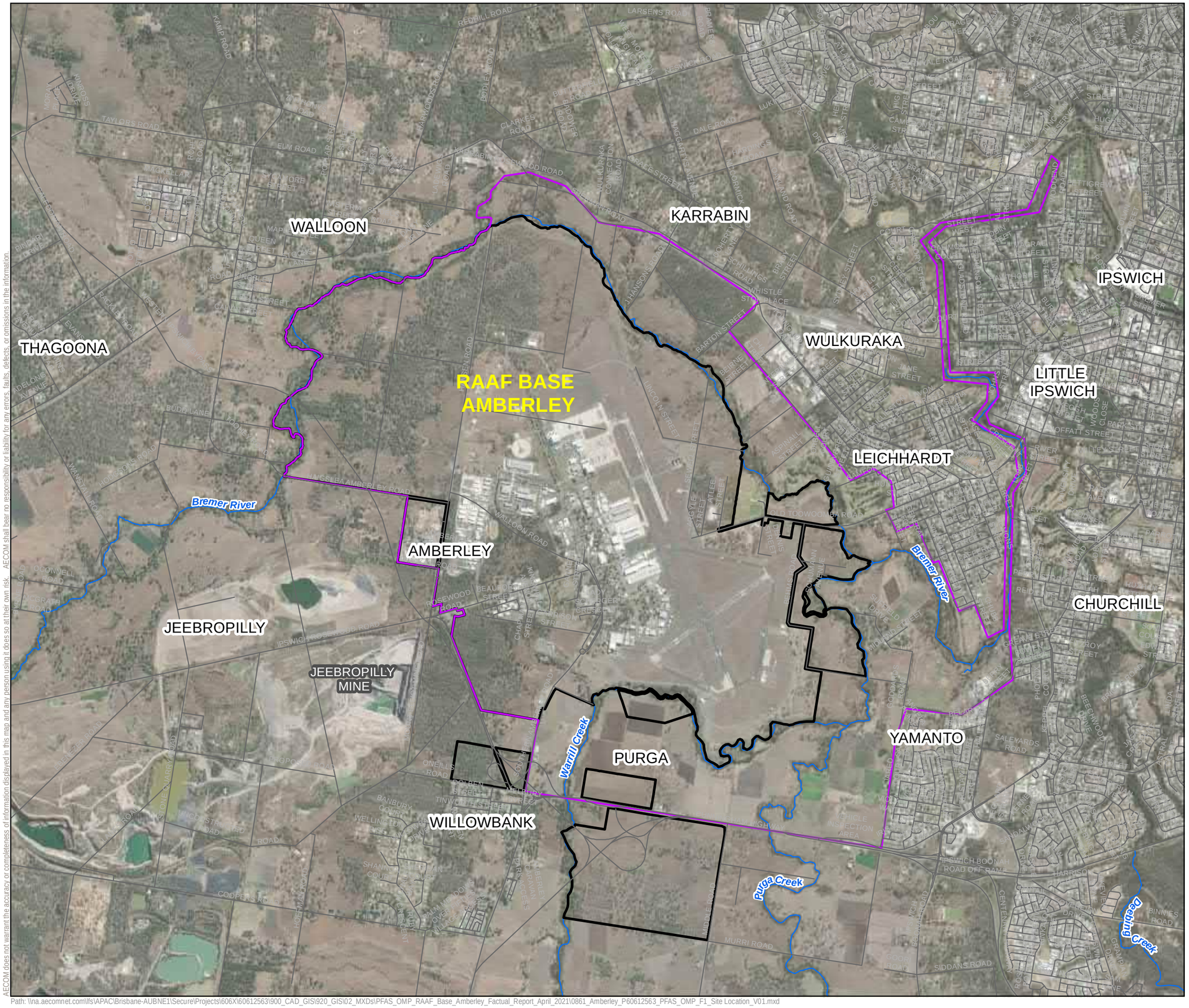
Appendix A

Figures

Appendix A Figures



LEGEND

- Management Area
- Base Boundary
- Watercourses

N

0 0.5 1 km

AECOM

SCALE 1:38,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 1: RAAF BASE AMBERLEY LOCATION

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY SAMPLING EVENT, FACTUAL REPORT: October 2021

CLIENT

DEPARTMENT OF DEFENCE

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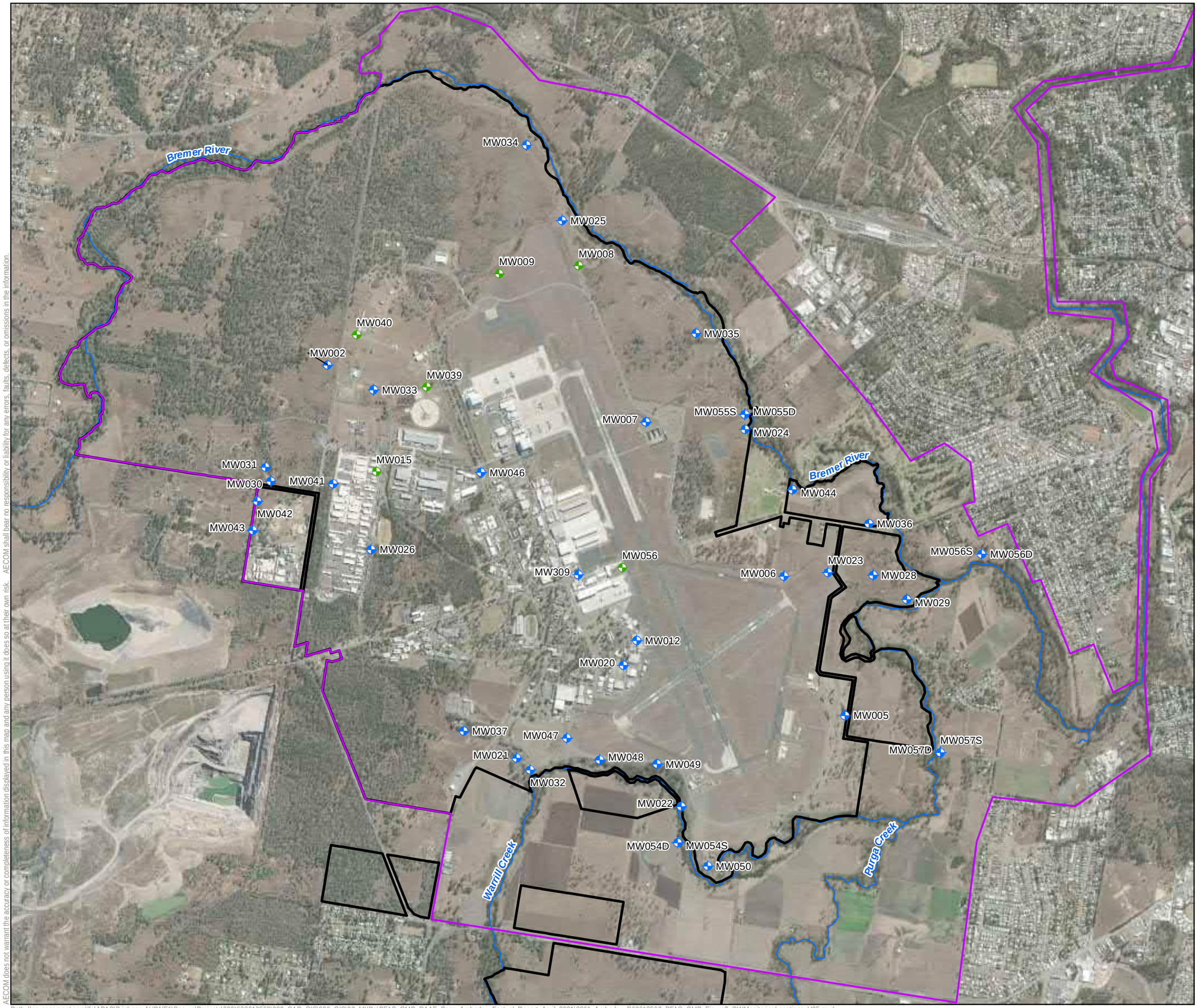

LEGEND

- Groundwater Monitoring Wells – sample not collected
- Groundwater Monitoring Wells – sample collected
- Management Area
- Base Boundary

N

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 2: Groundwater Monitoring Wells

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT,
FACTUAL REPORT: OCTOBER 2021

CLIENT

DEPARTMENT OF DEFENCE

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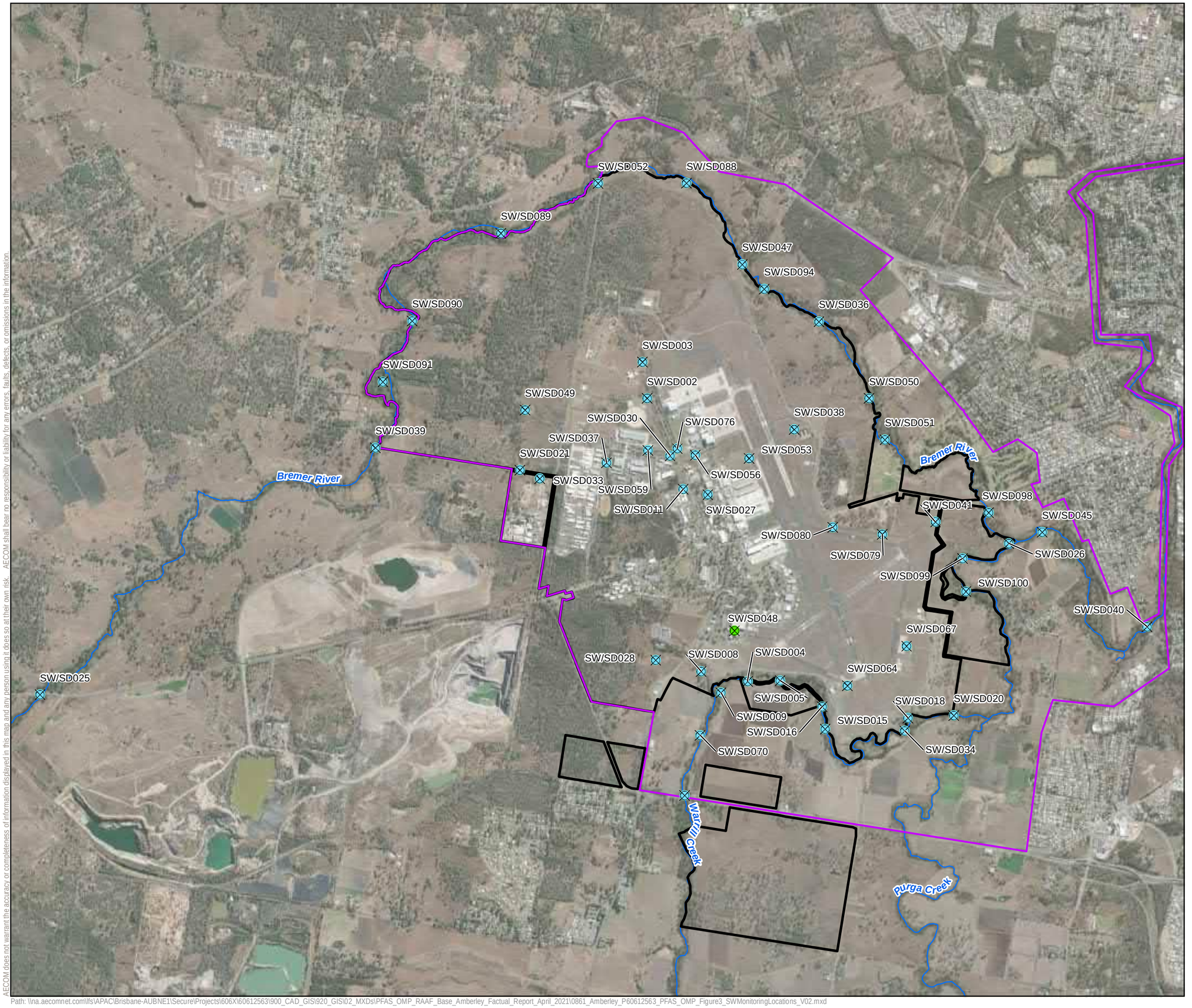

LEGEND

- Sediment - sample collected, Surface Water- sample not collected
- Surface Water / Sediment sample collected
- Management Area
- Base Boundary

km
0 0.5 1

AECOM

SCALE 1:35,000
SIZE A3
SHEET
COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 3: Surface Water and Sediment Sampling Locations

PROJECT
PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT,
FACTUAL REPORT: OCTOBER 2021

CLIENT
DEPARTMENT OF DEFENCE

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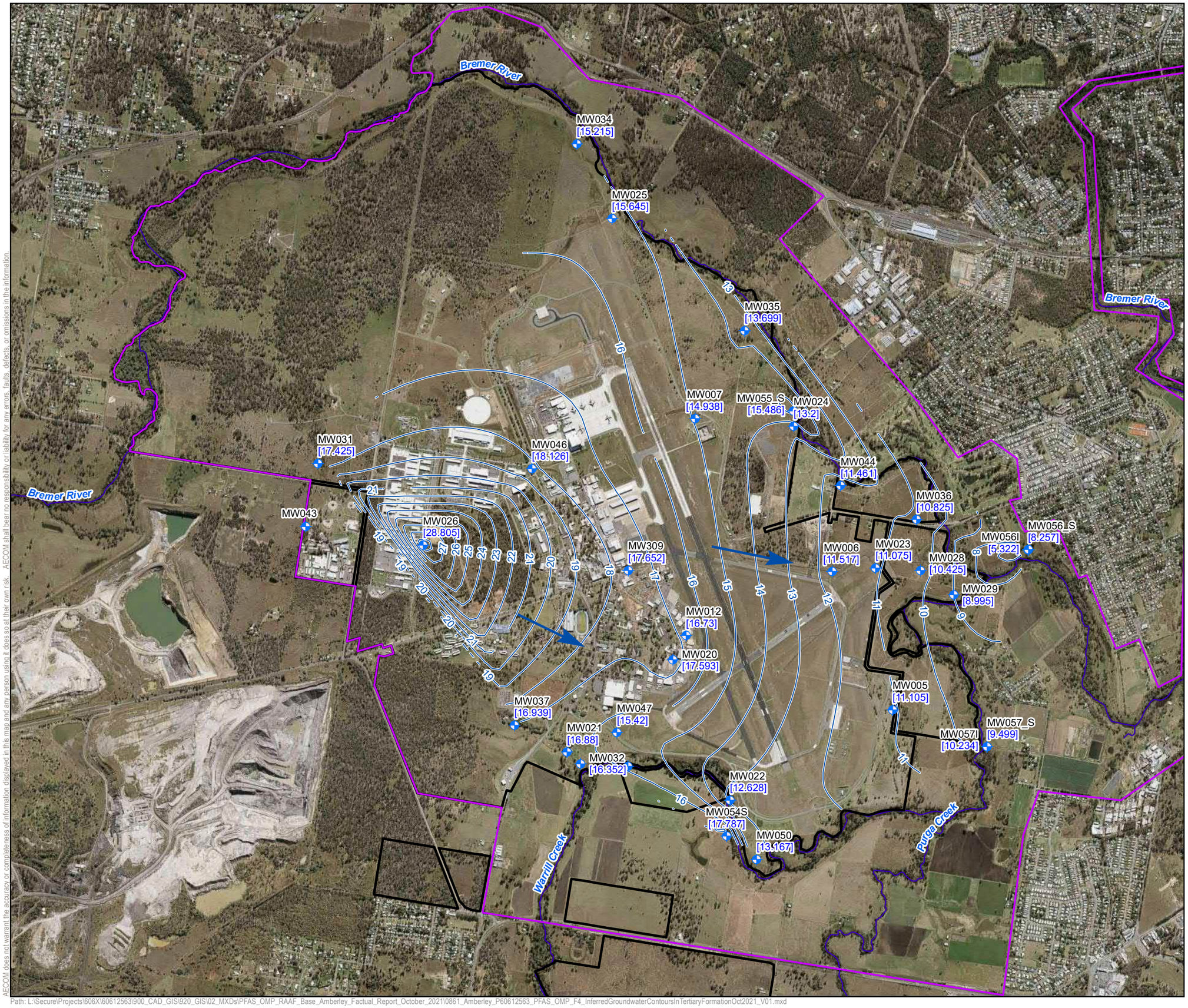

LEGEND

- Monitoring Wells
- Inferred Groundwater Contours
- Inferred Groundwater Flow Direction
- Watercourses
- Management Area
- Base Boundary

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 4: Inferred Groundwater Contours in the Alluvium/Tertiary Formation:
- October 2021

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY SAMPLING EVENT,
FACTUAL REPORT: OCTOBER 2021

CLIENT

DEPARTMENT OF DEFENCE

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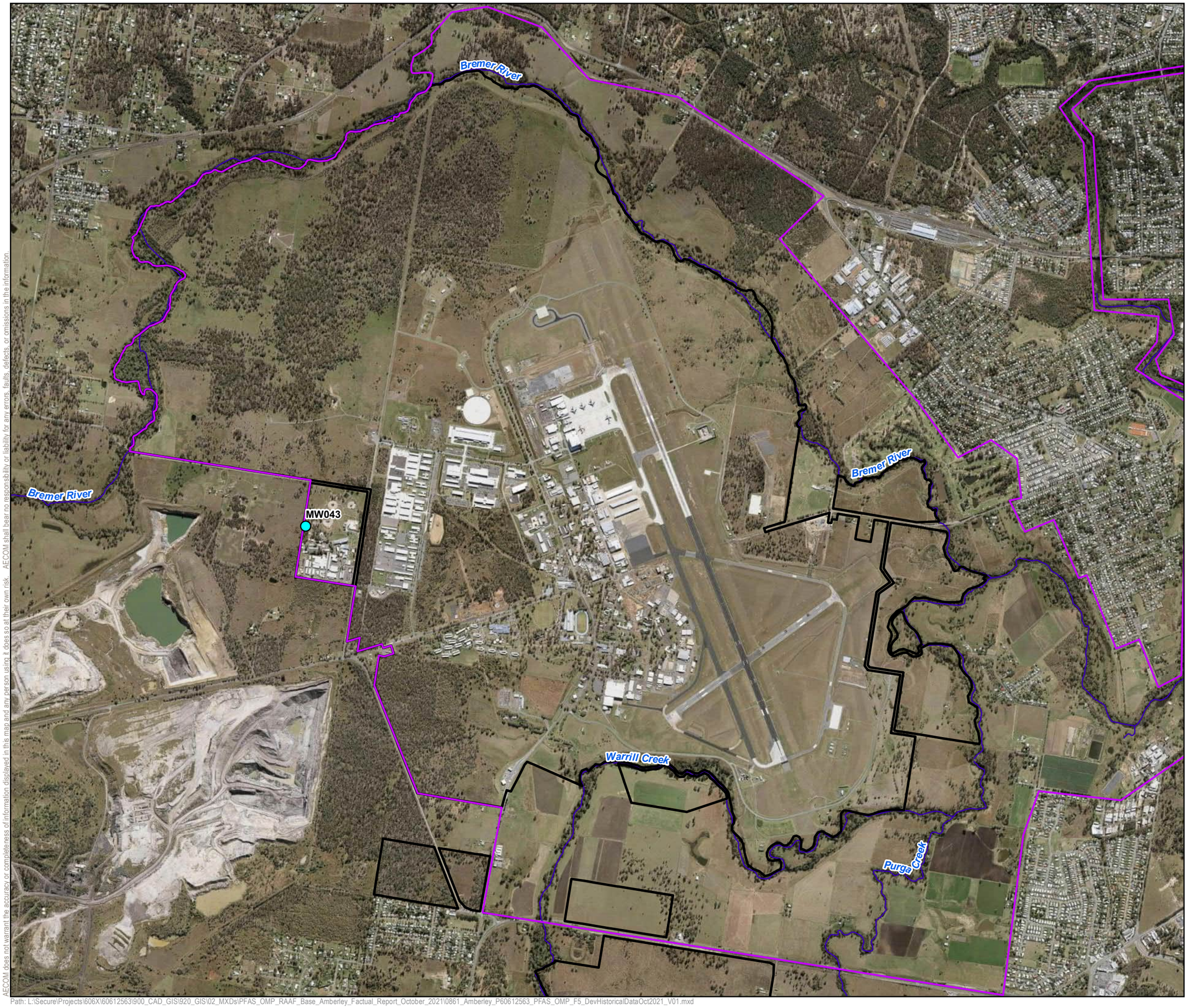

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LEGEND

Exceedance

- First time detection of PFHxS+PFOS or PFOA above LoR
- New exceedance of human health guideline values
- Management Area
- Base Boundary

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

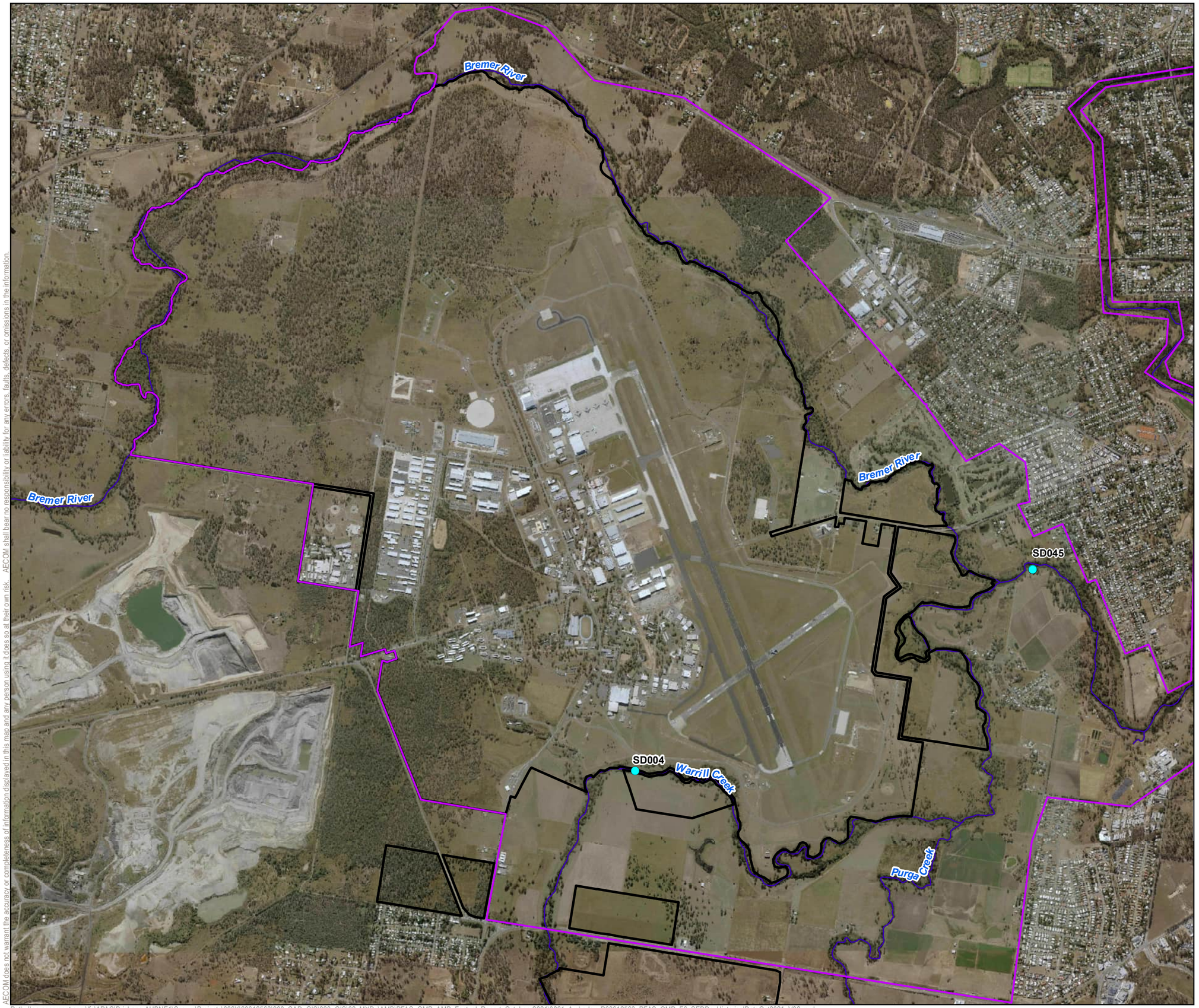
Figure 5: Groundwater Results: Deviations from Historical Data - October 2021

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY SAMPLING EVENT, FACTUAL REPORT: OCTOBER 2021

CLIENT

DEPARTMENT OF DEFENCE



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LEGEND

Exceedance

- First time detection of PFHxS+PFOS or PFOA above LoR
- Management Area
- Base Boundary

N

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 6: Sediment Results: Deviations from Historical Data - October 2021

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY SAMPLING EVENT, FACTUAL REPORT: OCTOBER 2021

CLIENT

DEPARTMENT OF DEFENCE

Appendix B

Tables

Appendix B Tables

Property ID	Well ID	Hydrasleeve Install Date	Hydrasleeve Sample Date	Aquifer	Depth to Water (mbtoc)	Well Depth (mbtoc)	TOC Elevation (mAHD)	Groundwater Elevation (mAHD)	Condition of Well	DO (mg/L)	EC (µS/cm)	pH	Er (mV)	Eh (mV)	Temp (°C)	Turbidity	Water Colour	Odour	Sheen	Sample Method / Comments
0861	MW002	21/04/2021	21/10/2021	Walloon Coal Measures	17.61	24.12	Unknown	Unknown	Good	0.41	15203	6.55	75.9	280.9	23	Low	Grey	No odour	No sheen	Hydrasleeve. Significant sediment at base of well.
0861	MW005	25/10/2021	27/10/2021	Alluvium	15.62	17.82	26.725	11.105	Good	0.48	2455	7.03	83.4	288.4	24.2	Clear	Light yellow	No odour	No sheen	Hydrasleeve
0861	MW006	25/10/2021	27/10/2021	Alluvium	10.42	13.33	21.937	11.517	Good	1.83	1449	7.71	157.4	362.4	22.3	Low	Light grey	No odour	No sheen	Hydrasleeve
0861	MW007	25/10/2021	27/10/2021	Alluvium	8.27	10.7	23.208	14.938	Good	1.32	4129	7.39	144.5	349.5	24.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW008	-	-	-	-	-	-	-	Damaged	-	-	-	-	-	-	-	-	-	-	Not sampled - well damaged.
0861	MW009	-	-	-	-	-	-	-	Damaged	-	-	-	-	-	-	-	-	-	-	Not sampled - well damaged.
0861	MW012	25/10/2021	27/10/2021	Tertiary Formation	9.445	16.18	26.175	16.73	Good	0.79	14808	6.78	102.2	307.2	29.3	Clear	Light yellow	No odour	No sheen	Hydrasleeve
0861	MW015	-	-	-	-	-	-	-	Destroyed	-	-	-	-	-	-	-	-	-	-	Not sampled - well destroyed.
0861	MW020	25/10/2021	27/10/2021	Tertiary Formation	9.45	15.37	27.043	17.593	Good	0.64	16616	6.68	116.7	321.7	28.4	Low	Light yellow	No odour	No sheen	Hydrasleeve
0861	MW021	26/10/2021	28/10/2021	Alluvium	3.84	5.69	20.72	16.88	Damaged	0.56	1053	7.27	137	342	23	Low	Light grey	No odour	No sheen	Hydrasleeve. Gatic is cracked.
0861	MW022	19/10/2021	21/10/2021	Alluvium	7.022	9.74	19.65	12.628	Good	1.01	1735	6.85	102	307	21.6	Clear	Clear		No sheen	Hydrasleeve
0861	MW023	25/10/2021	27/10/2021	Alluvium	9.435	12.86	20.51	11.075	Good	0.81	9645	6.98	170.8	375.8	24.8	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW024	20/10/2021	21/10/2021	Alluvium	7.75	11.91	20.95	13.2	Good	1.17	3814	7.33	82.7	287.7	21.9	Low	Light yellow	No odour	No sheen	Hydrasleeve
0861	MW025	22/10/2021	27/10/2021	Alluvium	9.775	12.25	25.42	15.645	Good	0.75	1960	7.37	123.4	328.4	24	Clear	-	No odour	No sheen	Hydrasleeve
0861	MW026	25/10/2021	27/10/2021	Tertiary Formation	11.435	17.46	40.24	28.805	Good	0.48	26620	6.73	99.1	304.1	26.1	Clear	-	No odour	No sheen	Hydrasleeve
0861	MW028	20/10/2021	21/10/2021	Alluvium	10.405	13.92	20.83	10.425	Good	0.52	7903	7.12	136.8	341.8	23	Low	Light yellow	No odour	No sheen	Hydrasleeve
0861	MW029	20/10/2021	21/10/2021	Alluvium	9.235	11.12	18.23	8.995	Good	1.92	5762	7.17	123	328	23	Clear	Light yellow	No odour	No sheen	Hydrasleeve
0861	MW030	20/10/2021	21/10/2021	Walloon Coal Measures	17.356	21.83	35.84	18.484	Good	0.6	22594	6.71	116.2	321.2	24.6	Low	Light yellow	No odour	No sheen	Hydrasleeve
0861	MW309	20/04/2021	26/10/2021	Tertiary Formation	10.955	19.3	28.607	17.652	Good	1.06	7163	6.88	79.5	284.5	24.2	Low	Grey	No odour	No sheen	Hydrasleeve
0861	MW031	20/10/2021	21/10/2021	Tertiary Formation	16.025	18.07	33.45	17.425	Damaged	-	-	-	-	-	-	-	-	-	-	Hydrasleeve. Ground surrounding the well has subsided causing the monument to sink. Lid cannot be closed. Parameters erroneously not collected.
0861	MW032	22/10/2021	25/10/2021	Alluvium	9.928	14.68	26.28	16.352	Good	0.43	2530	6.99	124.7	329.7	22.9	Clear	Light yellow	No odour	No sheen	Hydrasleeve
0861	MW033	25/10/2021	27/10/2021	Walloon Coal Measures	24.255	34.3	42.456	18.201	Good	0.38	15285	6.97	123.5	328.5	26	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW034	20/10/2021	21/10/2021	Alluvium	9.09	10.7	24.305	15.215	Good	2.02	2176	7.5	86.7	291.7	23.4		Light brown	No odour	No sheen	Hydrasleeve
0861	MW035	20/10/2021	21/10/2021	Alluvium	11.3	14.52	24.999	13.699	Good	0.65	3064	6.71	74.3	279.3	22.5	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW036	20/10/2021	21/10/2021	Alluvium	13.215	15.03	24.04	10.825	Good	2.4	2142	7.19	131.5	336.5	23.9	Turbid	Yellow / brown	No odour	No sheen	Hydrasleeve
0861	MW037	25/10/2021	27/10/2021	Alluvium	8.28	10.98	25.219	16.939	Good	0.89	7275	7.05	102.6	307.6	25.2	Clear	-	No odour	No sheen	Hydrasleeve
0861	MW039	-	-	-	-	-	-	-	Destroyed	-	-	-	-	-	-	-	-	-	-	Not sampled - well destroyed
0861	MW040	-	-	-	-	-	-	-	Destroyed	-	-	-	-	-	-	-	-	-	-	Not sampled - well destroyed
0861	MW041	14/10/2020	22/10/2021	Walloon Coal Measures	10.021	-	46.383	36.362	Unknown	0.6	20046	6.68	25	230	26	Low	Light yellow	No odour	No sheen	Hydrasleeve
0861	MW042	15/04/2021	26/10/2021	Walloon Coal Measures	22.49	28.9	40.036	17.546	Damaged	0.76	16952	6.81	1.6	206.6	25.8	Low	Light grey	Sulfuric odour	No sheen	Hydrasleeve. Gatic concrete collar and lid has cracks.
0861	MW043	15/04/2021	26/10/2021	Walloon Coal Measures	14.48	20.63	49.182	34.702	Good	0.91	3070	7.6	90.4	295.4	26.5	Medium	Orange / brown	No odour	No sheen	Hydrasleeve
0861	MW044	21/04/2021	21/10/2021	Alluvium	8.85	11.13	20.311	11.461	Good	1.19	981	7.14	33.4	238.4	25.3	Low	Light grey	No odour	No sheen	Hydrasleeve
0861	MW046	20/04/2021	26/10/2021	Tertiary Formation	7.875	-	26.001	18.126	Good	0.59	3072	7.21	31.5	236.5	23.8	Low	Light grey	Sulfuric odour	No sheen	Hydrasleeve
0861	MW047	20/04/2021	26/10/2021	Tertiary Formation	10.845	13.19	26.265	15.42	Damaged	0.5	1913	7.27	2.6	207.6	22.9	Low	Light grey	Sulfuric odour	No sheen	Hydrasleeve. Gatic concrete collar has cracks.
0861	MW048	16/04/2021	21/10/2021	Alluvium	-	10.27	23.108	-	Good	1.68	262.9	6.62	42.8	247.8	21	Medium	Light brown	No odour	No sheen	Bailer. Water level below top of hydrasleeve.
0861	MW049	12/10/2020	21/10/2021	Alluvium	-	10.29	-	-	Good	0.63	956	6.61	-21.8	183.2	21.6	Low	Light yellow	No odour	No sheen	Bailer. Water level below top of hydrasleeve.
0861	MW050	21/04/2021	28/10/2021	Alluvium	11.15	14.39	24.317	13.167	Damaged	1.59	1078	6.83	163.3	368.3	27.1	Low	Light grey	No odour	No sheen	Hydrasleeve. Gatic concrete collar, lid and casing has cracks.
0861	MW054S	27/10/2021	28/10/2021	Alluvium	6.53	6.89	24.317	17.787	Good	1.19	4768	6.79	67	272	23.7	Turbid	Brown	No odour	No sheen	Hydrasleeve
0861	MW054D	21/04/2021	28/10/2021	Walloon Coal Measures	6.27	20.93	24.317	18.047	Good	0.35	279.2	6.95	-47.3	157.7	27	Clear	Clear	Sulfuric odour	No sheen	Hydrasleeve
0861	MW055S	16/04/2021	21/10/2021	Alluvium	8.831		24.317	15.486	Good	2.38	1631	7.07	-30.3	174.7	22	Clear	Light yellow	No odour	No sheen	Hydrasleeve
0861	MW055D	16/04/2021	21/10/2021	Walloon Coal Measures	8.751	33.84	24.317	15.566	Good	0.46	7526	7.44	-42.1	162.9	22.4	Clear	Clear	No odour	No sheen	Hydrasleeve
0861	MW056	-	-	-	-	-	-	-	Destroyed	-	-	-	-	-	-	-	-	-	-	Not sampled - well destroyed
0861	MW056S	15/04/2021	22/10/2021	Alluvium	6.803		15.078	8.275	Good	1.11	3533	7	-1.3	203.7	25.4	Low	Clear	Slight organic odour	No sheen	Hydrasleeve
0861	MW056I	15/04/2021	22/10/2021	Tertiary Formation	9.44	-	14.762	5.322	Good	0.75	4248	6.83	0.6	205.6	24.6	Low	Clear	Slight organic odour	No sheen	Hydrasleeve
0861	MW057S	21/04/2021	22/10/2021	Alluvium	6.98	8.48	16.479	9.499	Good	0.45	891	6.72	-74.3	130.7	25.8	Low	Light yellow	Slight organic odour	No sheen	Hydrasleeve
0861	MW057I	21/04/2021	22/10/2021	Tertiary Formation	6.26	16.5	16.494	10.234	Good	0.56	844	7.12	-77	128	26.1	Low	Light yellow	Slight organic odour	No sheen	Hydrasleeve

Notes
mbtoc - metres below top of casing
mAHD - metres above Australian Height Datum
TOC - top of casing
DO - Dissolved Oxygen
EC - Electrical Conductivity
Er - Uncorrected Oxidation Reduction Potential
Eh - Corrected Oxidation Reduction Potential
` - no data
Er converted to Eh by adding 205 based on a YSI with Ag/AgCl sensor calibrated to a 3.5 molar KCL solution
mg/L - milligrams per litre
µS/cm - microsiemens per centimetre
mV - millivolts
°C - degrees Celcius

		PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFDoDA	PFTeDA	PFTrDA	PFUnDA	FOSA	EtFOSE	MeFOSE	EtFOSA	MeFOSA	EtFOSAA	MFOSAA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.1	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.05	0.02	0.02	0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.01
NEMP (2020) Human Health Drinking Water		**0.07**											**0.56**																		
NEMP (2020) Freshwater 99% Species Protection							*0.00023*						*19*																		
NEMP (2020) Freshwater 95% Species Protection							***0.13***						***220***																		

Location ID	Sample ID	Sample Date	Lab Report No.																													
MW002	0861_MW002_211021	21/10/2021	EB2130835	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW005	0861_MW005_211027	27/10/2021	EB2130850	0.05	<0.02	<0.02	0.04	<0.02	***0.01***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05
MW006	0861_MW006_211027	27/10/2021	EB2130850	**52.7**	1.44	1.12	8.72	0.44	***44***	<0.1	0.5	1.8	3.89	0.59	**1**	<0.1	<0.1	<0.1	<0.1	<0.25	<0.1	<0.1	<0.1	0.1	<0.25	<0.25	<0.25	<0.1	<0.1	<0.1	0.37	<0.1	<0.1	64
MW007	0861_MW007_211027	27/10/2021	EB2130850	**53.4**	2.13	2.36	19.5	1.41	***33.9***	<0.04	0.4	0.85	3.81	0.59	**1.35**	<0.04	<0.04	<0.04	<0.09	<0.04	<0.04	<0.48	<0.09	<0.09	<0.09	<0.09	<0.04	<0.04	<0.05	<0.15	<0.05	<0.05	66.3
MW012	0861_MW012_211027	27/10/2021	EB2130850	0.02	<0.02	<0.02	<0.01	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
MW020	0861_MW020_211027	27/10/2021	EB2130850	**12.8**	0.63	0.75	5.78	0.46	***7.07***	<0.02	0.4	0.9	1.71	0.5	**0.91**	0.06	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.15	<0.05	<0.05	19.3
MW021	0861_MW021_211028	28/10/2021	EB2130850	**95.6**	1.4	2.08	24.4	1.6	***71.2***	<0.07	<0.3	0.7	3.33	0.8	**3.1**	<0.07	<0.07	<0.07	<0.17	<0.07	<0.07	<0.07	<0.17	<0.17	<0.17	<0.17	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	109
MW022	0861_MW022_211021	21/10/2021	EB2130835	**9.01**	1.42	1.27	7.72	0.15	***1.29***	<0.02	0.7	0.29	1.44	0.27	0.4	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	15
MW023	0861_MW023_211027	27/10/2021	EB2130850	**0.52**	0.07	0.07	0.45	<0.02	***0.07***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.66
MW024	0861_MW024_211021	21/10/2021	EB2130835	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW025	0861_MW025_211027	27/10/2021	EB2130850	**0.72**	0.13	0.1	0.58	<0.02	***0.14***	<0.02	<0.1	0.03	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.08
MW026	0861_MW026_211027	27/10/2021	EB2130850	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02
MW028	0861_MW028_211021	21/10/2021	EB2130835	**60.1**	4	3.65	28.1	2.82	***32***	<0.05	0.7	1.01	5.48	0.9	**1.86**	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.12	<0.12	<0.12	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	80.5
MW029	0861_MW029_211021	21/10/2021	EB2130835	**9.92**	0.76	0.75	5.39	0.38	***4.53***	<0.02	<0.1	0.18	0.98	0.14	0.27	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	13.4
MW030	0861_MW030_211021	21/10/2021	EB2130835	**3.41**	1.79	1.27	3.38	0.03	***0.03***	<0.02	0.5	0.78	4.28	0.52	0.31	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	12.9
MW031	0861_MW031_211021	21/10/2021	EB2130835	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW032	0861_MW032_211025	25/10/2021	EB2130850	**33.2**	1.68	1.5	9.21	0.86	***24***	<0.1	<0.5	0.76	4.36	0.98	**2.27**	<0.1	<0.1	<0.1	<0.25	<0.1	<0.1	<0.1	<0.25	<0.25	<0.25	<0.25	<0.1	<0.1	<0.1	0.13	<0.1	<0.1	45.8
MW033	0861_MW033_211027	27/10/2021	EB2130850	<0.02	<0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	0.11	<0.05	<0.05	0.11
MW034	0861_MW034_211021	21/10/2021	EB2130835	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW035	0861_MW035_211021	21/10/2021	EB2130835	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW036	0861_MW036_211021	21/10/2021	EB2130835	0.03	<0.02	<0.02	0.03	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03
MW037	0861_MW037_211027	27/10/2021	EB2130850	**3.8**	1.45	1.24	3.78	<0.02	***0.02***	<0.02	0.1	0.16	0.97	0.1	0.03	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.85
MW041	0861_MW041_211022	22/10/2021	EB2130835	<0.01	0.08	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	0.07	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.19
MW042	0861_MW042_211026	26/10/2021	EB2130850	0.06	<0.02	<0.02	0.03	<0.02	***0.03***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06
MW043	0861_MW043_211026	26/10/2021	EB2130850	**0.49**	0.36	0.08	0.22	<0.02	***0.27***	<0.02	0.1	0.08	0.21	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.34
MW044	0861_MW044_211021	21/10/2021	EB2130835	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW046	0861_MW046_211026	26/10/2021	EB2130850	**277**	12.5	11.6	83.4	6.7	***194***	<0.5	11.6	25.9	50	9.55	***21.7***	<0.5	<0.5	<0.5	<1.25	<0.5	<0.5	<0.5	<1.25	<1.25	<1.25	<1.25	<0.5	<0.5	<0.5	33.6	1.75	<0.5	462
MW047	0861_MW047_211026	26/10/2021	EB2130850	**8.79**	1.58	0.67	3.58	0.23	***5.21***	<0.02	0.72	0.82	1.58	0.03	0.07	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	14.5
MW048	0861_MW048_211021	21/10/2021	EB2130835	**2.34**	0.12	0.09	0.74	0.03	***1.6***	<0.02	<0.1	0.04	0.16	<0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.82
MW049	0861_MW049_211021	21/10/2021	EB2130835	**25.9**	1.93	1.81	10.5	0.51	***15.4***	<0.02	0.8	0.9	3.49	0.41	**1.07**	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	36.8
MW050	0861_MW050_211028	28/10/2021	EB2130850	**0.18**	0.02	<0.02	0.07	<0.02	***0.11***	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.24
MW054S	0861_MW054S_211028	28/10/2021	EB2130821	**0.07**	<0.05	<0.05	<0.05	<0.05	***0.07***	<0.05	<0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.12	<0.12	<0.12	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07
MW054D	0861_MW054D_211028	28/10/2021	EB2130821	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW055S	0861_MW055S_211021	21/10/2021	EB2130835	**0.48**	0.05	0.05	0.3	<0.02	***0.18***	<0.02	<0.1	<0.02	0.05	<0.02	0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.65
MW055D	0861_MW055D_211021	21/10/2021	EB2130835	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.05	<0.05	<0.05	0.05
MW056S	0861_MW056S_211022	22/10/2021	EB2130815	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW056I	0861_MW056I_211022	22/10/2021	EB2130815	0.01	<0.02	<0.02	<0.01	<0.02	***0.01***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01
MW057S	0861_MW057S_211126	26/11/2021	EB2134318	0.05	0.02	<0.02	0.04	<0.02	***0.01***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07
MW057I	0861_MW057I_211126	26/11/2021	EB2134318	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW309	0861_MW309_211026	26/10/2021	EB2130850	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01

LOR is limit of reporting
µg/L is micrograms per litre
'-' denotes no analysis undertaken
'<' denotes concentration is less than
NEMP is National Environmental Mangement Plan
NHMRC is National Health Medical Research Council
Denotes first time detection above LOR
Denotes new exceedance of human health guideline values

Property ID	Location ID	Sample Date	Location	DO (PPM or mg/L)	EC (µS/cm)	pH	Er (mV)	Eh (mV)	Temp (°C)	Turbidity	Odour	Sheen	Colour	Sample Method/Comments
0861	SW002	25/10/2021	Drain	0.11	248.2	6.88	8.2	213.2	23.2	Low	No odour	Slight sheen	Brown	Grab sample
0861	SW003	22/10/2021	Drain	3.14	141.3	8.06	45.2	250.2	22.8	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW004	19/10/2021	Warrill Creek	5.71	594	7.37	138.2	343.2	19.7	Medium	No odour	No sheen	Brown	Grab sample
0861	SW005	19/10/2021	Warrill Creek	5.72	594	7.43	141.7	346.7	19.7	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW008	25/10/2021	Drain	1.02	298.2	6.99	35.3	240.3	22.9	Low	Organic odour	No sheen	Brown	Grab sample
0861	SW009	22/10/2021	Warrill Creek	4.99	518.3	7.41	113.6	318.6	21.9	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW011	25/10/2021	Drain	7.03	415.7	7.54	80.5	285.5	25.2	Clear	No odour	No sheen	Pale yellow	Grab sample
0861	SW015	19/10/2021	Warrill Creek	4.69	847	7.48	130.6	335.6	20.1	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW016	19/10/2021	Warrill Creek	6.91	869	6.82	135.8	340.8	19.7	Medium	No odour	No sheen	Brown	Grab sample
0861	SW018	19/10/2021	Warrill Creek	5.2	849	7.52	127.5	332.5	19.9	Medium	No odour	No sheen	Brown	Grab sample
0861	SW020	19/10/2021	Warrill Creek	5.12	844	7.57	128.7	333.7	19.8	Medium	No odour	No sheen	Brown	Grab sample
0861	SW021	20/10/2021	Drain	3.95	315.5	8.32	76.6	281.6	21.3	Turbid	Slight organic odour	No sheen	Brown	Grab sample
0861	SW025	21/10/2021	Bremer River	4.27	168.9	6.78	140.5	345.5	20.5	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW026	20/10/2021	Warrill Creek	1.88	433.4	6.8	102.2	307.2	24.5	Medium	No odour	No sheen	Brown	Grab sample
0861	SW027	25/10/2021	Drain	5.12	666	7.45	85	290	21.5	Clear	No odour	No sheen	Pale yellow	Grab sample
0861	SW028	19/10/2021	Drain	3.95	199.1	6.76	125	330	19	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW030	26/10/2021	Drain	2.18	728	7.02	-17.9	187.1	25.8	Turbid	Organic odour	Sheen	Brown	Grab sample
0861	SW033	26/10/2021	Drain	4.26	474	7.54	79.6	284.6	25.4	Low	Organic odour	No sheen	Brown	Grab sample
0861	SW034	19/10/2021	Warrill Creek	5.17	754	7.52	134.2	339.2	19.9	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW036	20/10/2021	Bremer River	3.92	238.5	7.12	77.1	282.1	19.5	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW037	26/10/2021	Drain	0.11	549	7.08	0.5	205.5	26.8	Low	Organic odour	Sheen	Brown	Grab sample
0861	SW038	25/10/2021	Drain	5.71	536	7.45	102.4	307.4	27.1	Clear	No odour	Sheen	Pale yellow	Grab sample
0861	SW039	21/10/2021	Bremer River	4.11	181.1	6.59	135.3	340.3	20.7	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW040	19/10/2021	Bremer River	3.98	621	7.28	131.5	336.5	20.4	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW041	26/10/2021	Drain	1.58	294.5	7.66	35.2	240.2	25.2	Medium	Organic odour	Sheen	Brown	Grab sample
0861	SW043	21/10/2021	Warrill Creek	4.69	735	7.29	148.8	353.8	21.2	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW045	19/10/2021	Bremer River	3.71	706	7.28	122.6	327.6	20.4	Medium	No odour	No sheen	Brown	Grab sample
0861	SW047	20/10/2021	Bremer River	3.61	228.2	6.71	136.6	341.6	20.2	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW048	18/10/2021	Drain	-	-	-	-	-	-	-	-	-	-	Dry - no sample collected.
0861	SW049	20/10/2021	Drain	2.96	271.2	7.27	99.3	304.3	26.6	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW050	19/10/2021	Bremer River	3.85	237.8	7.07	57.8	262.8	19.3	Medium	No odour		Brown	Grab sample
0861	SW051	19/10/2021	Bremer River	3.66	796	7.12	128.5	333.5	20.6	Medium	No odour	No sheen	Brown	Grab sample
0861	SW052	20/10/2021	Bremer River	3.03	237.1	6.82	133.7	338.7	20.4	-	No odour	No sheen	Brown	Grab sample
0861	SW053	25/10/2021	Drain	7.01	340.8	7.06	42.1	247.1	26.8	Clear	No odour	No sheen	Pale yellow	Grab sample
0861	SW056	26/10/2021	Drain	0.14	402.8	7.1	-51.6	153.4	22.5	Low	Organic odour	No sheen	Brown	Grab sample
0861	SW059	26/10/2021	Drain	0.01	616	7.01	-109.3	95.7	29.7	Medium	Organic odour	No sheen	Brown	Grab sample
0861	SW064	25/10/2021	Drain	0.89	214.2	6.26	113.5	318.5	23.8	Low	No odour	No sheen	Yellow-red	Grab sample
0861	SW067	25/10/2021	Drain	8.41	265.5	6.5	99.1	304.1	26.7	Low	No odour	Slight sheen	Brown	Grab sample
0861	SW076	26/10/2021	Drain	0.77	403.6	7.35	83.5	288.5	25.3	Medium	Sulfuric odour	No sheen	Brown	Grab sample
0861	SW079	25/10/2021	Drain	8.82	217.2	7.33	99.2	304.2	22.5	Low	No odour	No sheen	Brown	Grab sample
0861	SW080	25/10/2021	Drain	0.12	309.3	6.72	58.2	263.2	23	Clear	Sulfuric odour	Sheen	Brown	Grab sample
0861	SW088	20/10/2021	Bremer River	2.32	229.3	6.75	134.3	339.3	20.3	Medium	No odour	No sheen	Brown	Grab sample
0861	SW089	20/10/2021	Bremer River	2.3	240.5	6.86	133	338	20.5	Medium	No odour	No sheen	Brown	Grab sample
0861	SW090	21/10/2021	Bremer River	3.03	207.3	7.29	90.7	295.7	21.4	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW091	21/10/2021	Bremer River	4.21	202.1	7.26	82.7	287.7	20.9	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW094	22/10/2021	Bremer River	3.97	168.1	7.36	95	300	22.7	Turbid	No odour	No sheen	Brown	Grab sample
0861	SW098	19/10/2021	Bremer River	3.37	804	7.14	128.8	333.8	20.6	Medium	No odour	No sheen	Brown	Grab sample
0861	SW099	20/10/2021	Warrill Creek	3.92	346.4	7.15	104.3	309.3	22.7	Medium	No odour	No sheen	Brown	Grab sample
0861	SW100	20/10/2021	Warrill Creek	4.42	325.5	7.29	103.5	308.5	21.8	Turbid	No odour	No sheen	Brown	Grab sample

Notes

DO - Dissolved Oxygen

EC - Electrical Conductivity

Er - Uncorrected Oxidation Reduction Potential

Eh - Corrected Oxidation Reduction Potential

` - no data

Er converted to Eh by adding 205 based on a YSI with Ag/AgCl sensor calibrated to a 3.5 molar KCL solution

mg/L - milligrams per litre

µS/cm - microsiemens per centimetre

mV - millivolts

°C - degrees Celcius

		PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFDoDA	PFTeDA	PFTrDA	PFUnDA	FOSA	EtFOSE	MeFOSE	EtFOSA	MeFOSA	EtFOSAA	MFOSAA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.1	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.01
NHMRC (2019) Human Health Recreational Water		**2.0**											**10.0**																		
NEMP (2018) Freshwater 99% Species Protection							*0.00023*						*19*																		
NEMP (2018) Freshwater 95% Species Protection							***0.13***						***220***																		
Location ID	**Sample ID**	**Sample Date**	**Lab Report No.**																												
SW002	0861_SW002_211025	25/10/2021	EB2130835	1.06	0.07	0.04	0.4	<0.02	***0.66***	<0.02	0.16	0.25	0.23	0.07	0.07	0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.97
SW003	0861_SW003_211022	22/10/2021	EB2130835	1.43	0.1	0.08	0.58	0.03	***0.85***	<0.02	<0.1	0.16	0.24	0.04	0.06	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.14
SW004	0861_SW004_211019	19/10/2021	EB2130835	0.01	<0.02	<0.02	<0.01	<0.02	***0.01***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01
SW005	0861_SW005_211019	19/10/2021	EB2130835	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW008	0861_SW008_211026	26/10/2021	EB2130850	0.67	0.08	0.03	0.26	<0.02	***0.41***	<0.02	<0.1	<0.04	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.83
SW009	0861_SW009_211022	22/10/2021	EB2130835	0.02	<0.02	<0.02	<0.01	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
SW011	0861_SW011_211026	26/10/2021	EB2130850	**3.87**	0.18	0.16	1.72	0.09	***2.15***	<0.02	0.1	0.17	0.38	0.06	0.11	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.12
SW015	0861_SW015_211019	19/10/2021	EB2130835	0.05	<0.02	<0.02	0.01	<0.02	***0.04***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05
SW016	0861_SW016_211019	19/10/2021	EB2130835	0.02	<0.02	<0.02	<0.01	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
SW018	0861_SW018_211019	19/10/2021	EB2130835	0.04	<0.02	<0.02	0.01	<0.02	***0.03***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04
SW020	0861_SW020_211019	19/10/2021	EB2130835	0.05	<0.02	<0.02	0.01	<0.02	***0.04***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05
SW021	0861_SW021_211021	21/10/2021	EB2130835	**14.7**	1.01	0.74	5.2	0.26	***9.5***	0.31	0.7	1.4	2.77	0.41	0.8	0.05	<0.02	<0.02	<0.06	<0.02	<0.02	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	23.2
SW025	0861_SW025_211022	22/10/2021	EB2130815	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW026	0861_SW026_211020	20/10/2021	EB2130815	0.07	<0.02	<0.02	0.02	<0.02	***0.05***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07
SW027	0861_SW027_211026	26/10/2021	EB2130850	0.99	0.06	0.06	0.44	0.02	***0.55***	<0.02	<0.1	0.1	0.15	0.05	0.05	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.48
SW028	0861_SW028_211019	19/10/2021	EB2130835	0.98	0.06	0.02	0.27	<0.02	***0.71***	<0.02	<0.1	0.02	0.04	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.13
SW030	0861_SW030_211026	26/10/2021	EB2130850	**13.7**	1.18	0.81	6.06	0.34	***7.68***	<0.02	0.77	1.69	2.91	0.5	0.59	0.04	0.02	0.04	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.72	<0.05	<0.05	23.4
SW033	0861_SW033_211026	26/10/2021	EB2130850	**101**	2.54	2.94	22.1	0.89	***78.6***	0.47	1.96	3.05	8.49	0.94	2.7	0.08	0.02	<0.02	<0.05	<0.02	<0.02	0.11	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	125
SW034	0861_SW034_211019	19/10/2021	EB2130835	0.02	<0.02	<0.02	<0.01	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
SW036	0861_SW036_211020	20/10/2021	EB2130835	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW037	0861_SW037_211026	26/10/2021	EB2130850	**5.02**	0.6	0.4	2.49	0.13	***2.53***	<0.02	0.28	0.62	1.17	0.18	0.22	0.03	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.65
SW038	0861_SW038_211025	25/10/2021	EB2130835	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW039	0861_SW039_211022	22/10/2021	EB2130815	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW040	0861_SW040_211019	19/10/2021	EB2130815	0.15	<0.02	<0.02	0.05	<0.02	*0.1*	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17
SW041	0861_SW041_211026	26/10/2021	EB2130850	**4.45**	0.3	0.23	1.84	0.13	***2.61***	<0.02	<0.1	0.14	0.52	0.06	0.1	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	5.93
SW043	0861_SW043_211022	22/10/2021	EB2130815	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW045	0861_SW045_211019	19/10/2021	EB2130815	0.09	<0.02	<0.02	0.03	<0.02	*0.06*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09
SW047	0861_SW047_211020	20/10/2021	EB2130835	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW049	0861_SW049_211020	20/10/2021	EB2130835	**4.47**	0.35	0.23	2.07	0.11	***2.4***	<0.02	0.4	0.32	0.9	0.13	0.3	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.21
SW050	0861_SW050_211019	19/10/2021	EB2130835	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW051	0861_SW051_211019	19/10/2021	EB2130835	0.14	<0.02	<0.02	0.06	<0.02	*0.08*	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17
SW052	0861_SW052_211020	20/10/2021	EB2130835	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW053	0861_SW053_211025	25/10/2021	EB2130835	1.01	0.06	0.06	0.52	<0.02	***0.49***	<0.02	<0.1	0.02	0.11	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.27
SW056	0861_SW056_211026	26/10/2021	EB2130850	**2.56**	0.29	0.24	1.43	0.06	***1.13***	<0.02	0.27	0.52	0.79	0.14	0.15	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	5.12
SW059	0861_SW059_211026	26/10/2021	EB2130850	**10.1**	1.05	0.72	4.03	0.25	***6.05***	<0.02	0.79	1.7	2.27	0.43	0.59	0.03	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.11	<0.05	<0.05	18
SW064	0861_SW064_211025	25/10/2021	EB2130835	1.5	0.29	0.13	0.79	0.03	***0.71***	<0.02	0.11	0.1	0.26	0.02	0.04	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.48
SW067	0861_SW067_211025	25/10/2021	EB2130835	**19.5**	1.7	1.48	10.1	0.31	***9.39***	<0.05	3	3.78	4.67	0.48	0.55	0.14	<0.05	<0.05	<0.12	<0.05	<0.05	<0.05	<0.12	<0.12	<0.12	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	35.6
SW076	0861_SW076_211026	26/10/2021	EB2130850	**3.9**	0.41	0.3	1.83	0.1	***2.07***	<0.02	0.26	0.61	0.95	0.18	0.2	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.18	<0.05	<0.05	7.09
SW079	0861_SW079_211025	25/10/2021	EB2130835	0.73	0.06	0.05	0.32	<0.02	***0.41***	<0.02	<0.1	0.04	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.03
SW080	0861_SW080_211025	25/10/2021	EB2130835	**4.97**	0.19	0.17	1.85	0.11	***3.12***	<0.02	<0.1	0.11	0.41	0.05	0.09	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.1
SW088	0861_SW088_211020	20/10/2021	EB2130835	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW089	0861_SW089_211020	20/10/2021	EB2130835	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW090	0861_SW090_211021	21/10/2021	EB2130850	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW091	0861_SW091_211021	21/10/2021	EB2130835	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW094	0861_SW094_211022	22/10/2021	EB2130835	0.33	0.02	<0.02	0.12	<0.02	***0.21***	<0.02	<0.1	0.03	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.44
SW098	0861_SW098_211019	19/10/2021	EB2130815	0.16	<0.02	<0.02	0.06	<0.02	*0.1*	<0.02	<0.1	0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.21
SW099	0861_SW099_211020	20/10/2021	EB2130835	0.02	<0.02	<0.02	0.01	<0.02	*0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
SW100	0861_SW100_211020	20/10/2021	EB2130835	0.05	<0.02	<0.02	0.02	<0.02	*0.03*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05

NEMP is National Environmental Mangement Plan
NHMRC is National Health Medical Research Council
Denotes first time detection above LOR
Denotes new exceedance of human health guideline values

Property ID	Location ID	Sample Date	Sample Description	Odour
0861	SD002	25/10/2021	sandy CLAY, brown, medium plasticity.	No odour
0861	SD003	22/10/2021	sandy CLAY, brown, soft, medium plasticity, medium to coarse grained sands, trace of leaves and grass roots.	No odour
0861	SD004	19/10/2021	clayey SAND, grey-black fine grained, with grass and roots.	No odour
0861	SD005	19/10/2021	sandy CLAY, brown, with rootlets.	No odour
0861	SD008	26/10/2021	sandy CLAY, brown, medium plasticity.	No odour
0861	SD009	22/10/2021	sandy CLAY, brown, soft, medium plasticity, medium to coarse grained sands, trace of leaves and grass roots.	No odour
0861	SD011	26/10/2021	sandy CLAY, brown, medium plasticity.	No odour
0861	SD015	19/10/2021	sandy CLAY, brown, medium plasticity, with rootlets.	No odour
0861	SD016	19/10/2021	clayey SAND, grey-black fine grained, with grass and roots.	No odour
0861	SD018	19/10/2021	sandy CLAY, brown, medium plasticity, with rootlets and gravels.	No odour
0861	SD020	19/10/2021	sandy CLAY, brown, medium plasticity, with rootlets.	No odour
0861	SD021	21/10/2021	sandy GRAVEL, loose, medium grained, angular, trace of leaves.	No odour
0861	SD025	22/10/2021	sandy CLAY, brown, soft, low plasticity, medium to coarse grained sands, trace of leaves and grass roots.	No odour
0861	SD026	20/10/2021	sandy CLAY, brown, high plasticity.	No odour
0861	SD027	26/10/2021	gravelly SAND.	No odour
0861	SD028	19/10/2021	sandy CLAY, brown, high plasticity.	No odour
0861	SD030	26/10/2021	sandy CLAY, brown, medium plasticity.	No odour
0861	SD033	26/10/2021	sandy CLAY, brown, medium plasticity.	No odour
0861	SD034	19/10/2021	sandy CLAY, brown, high plasticity.	No odour
0861	SD036	20/10/2021	sandy CLAY, brown, high plasticity.	No odour
0861	SD037	26/10/2021	sandy CLAY, brown, medium plasticity.	No odour
0861	SD038	25/10/2021	SAND, brown, medium grained.	No odour
0861	SD039	22/10/2021	sandy CLAY, brown, soft, low plasticity, medium to coarse grained sands, trace of leaves and grass roots.	No odour
0861	SD040	19/10/2021	sandy CLAY, brown, high plasticity.	No odour
0861	SD041	26/10/2021	sandy CLAY, brown, medium plasticity.	No odour
0861	SD043	22/10/2021	sandy CLAY, brown, soft, medium plasticity, medium to coarse grained sands, trace of leaves and grass roots.	No odour
0861	SD045	19/10/2021	sandy CLAY, brown, high plasticity.	No odour
0861	SD047	20/10/2021	sandy CLAY, brown, high plasticity.	No odour
0861	SD048	20/10/2021	sandy CLAY, brown, medium plasticity.	No odour
0861	SD049	20/10/2021	sandy CLAY, brown, high plasticity.	No odour
0861	SD050	19/10/2021	sandy CLAY, brown, high plasticity.	No odour
0861	SD051	19/10/2021	sandy CLAY, brown, high plasticity.	No odour
0861	SD052	20/10/2021	sandy CLAY, brown, high plasticity.	No odour
0861	SD053	25/10/2021	sandy CLAY, medium plasticity.	No odour
0861	SD056	26/10/2021	sandy CLAY, brown, medium plasticity.	No odour
0861	SD059	26/10/2021	sandy CLAY, brown, medium plasticity.	No odour
0861	SD064	25/10/2021	sandy CLAY, brown, soft, medium plasticity, medium to coarse grained sands, trace of leaves and grass roots.	No odour
0861	SD067	25/10/2021	sandy CLAY, brown, soft, medium plasticity, medium to coarse grained sands, trace of leaves and grass roots.	No odour
0861	SD076	26/10/2021	sandy CLAY, brown, medium plasticity.	No odour
0861	SD079	25/10/2021	gravelly SAND, medium grained.	No odour
0861	SD080	25/10/2021	sandy CLAY, medium plasticity.	No odour
0861	SD088	20/10/2021	sandy CLAY, brown, high plasticity.	No odour
0861	SD089	20/10/2021	sandy CLAY, brown, high plasticity.	No odour
0861	SD090	21/10/2021	sandy CLAY, brown, soft, low plasticity, medium to coarse grained sands, trace of leaves and grass roots.	No odour
0861	SD091	21/10/2021	sandy CLAY, brown, soft, low plasticity, medium to coarse grained sands, trace of leaves and grass roots.	No odour
0861	SD094	22/10/2021	sandy CLAY, brown, soft, medium plasticity, medium to coarse grained sands, trace of leaves and grass roots.	No odour
0861	SD098	19/10/2021	sandy CLAY, brown, high plasticity.	No odour
0861	SD099	20/10/2021	sandy CLAY, brown, high plasticity.	No odour
0861	SD100	20/10/2021	sandy CLAY, brown, high plasticity.	No odour

				PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFDoDA	PFTeDA	PFTrDA	PFUnDA	FOSA	EtFOSE	MeFOSE	EtFOSA	MeFOSA	EtFOSAA	MFOSAA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFAS
			Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
			LOR	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0005	0.0002
Location ID	Sample ID	Sample Date	Lab Report No.																														
SD002	0861_SD002_211025	25/10/2021	EB2130835	0.0434	<0.0002	<0.0002	0.0027	<0.0002	0.0407	0.0018	<0.001	0.0024	0.0021	0.0018	0.0009	0.0012	0.0016	0.0023	<0.0006	0.0006	0.0022	<0.0002	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	0.0609
SD003	0861_SD003_211022	22/10/2021	EB2130835	0.0297	<0.0002	<0.0002	0.0013	<0.0002	0.0284	0.0016	<0.001	0.001	0.001	0.0005	0.0005	0.0006	0.0009	0.0005	<0.0005	<0.0002	0.0008	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0371
SD004	0861_SD004_211019	19/10/2021	EB2130835	0.0051	<0.0002	<0.0002	0.0006	<0.0002	0.0045	0.0005	<0.001	0.0004	0.0006	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0069
SD005	0861_SD005_211019	19/10/2021	EB2130835	0.0104	<0.0006	<0.0005	0.0012	<0.0005	0.0092	<0.0008	<0.002	<0.0005	<0.001	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0104
SD008	0861_SD008_211026	26/10/2021	EB2130850	0.109	<0.0002	0.0003	0.0038	0.0005	0.105	0.0045	<0.001	0.0005	0.0004	<0.0002	0.0004	0.0003	0.0004	<0.0002	<0.0006	<0.0002	0.0008	0.0003	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.117
SD009	0861_SD009_211022	22/10/2021	EB2130835	0.01	<0.0002	<0.0002	0.0004	<0.0002	0.0096	<0.014	<0.001	<0.0002	0.0003	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.0002	<0.0002	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0107
SD011	0861_SD011_211026	26/10/2021	EB2130850	0.0806	0.0013	0.0008	0.0075	0.0008	0.0731	<0.0008	0.005	0.014	0.0096	0.0043	0.0016	0.0006	0.0012	0.0018	<0.0006	0.0004	0.0017	<0.0002	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.124
SD015	0861_SD015_211019	19/10/2021	EB2130835	<0.0012	<0.0012	<0.0012	<0.0018	<0.0012	<0.0154	<0.0012	<0.006	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0031	<0.0012	<0.0012	<0.0012	<0.0031	<0.0031	<0.0031	<0.0031	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
SD016	0861_SD016_211019	19/10/2021	EB2130835	0.0128	<0.0005	<0.0005	0.0024	<0.0005	0.0104	<0.0005	<0.002	<0.0005	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0136
SD018	0861_SD018_211019	19/10/2021	EB2130835	0.0064	<0.001	<0.001	<0.001	<0.001	0.0064	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.001	<0.001	<0.0025	<0.0025	<0.0025	<0.0025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0064
SD020	0861_SD020_211019	19/10/2021	EB2130835	0.0042	<0.0002	<0.0002	0.0004	<0.0002	0.0038	0.0007	<0.001	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0052
SD021	0861_SD021_211021	21/10/2021	EB2130835	0.0302	0.0003	0.0002	0.0018	0.0002	0.0284	0.0032	<0.001	0.0004	0.0009	0.0002	0.0005	<0.0002	<0.0002	0.0004	<0.0005	0.0004	0.0005	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0382
SD025	0861_SD025_211022	22/10/2021	EB2130815	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0007	<0.0014	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD026	0861_SD026_211020	20/10/2021	EB2130815	0.0062	<0.0002	<0.0002	0.0006	<0.0002	0.0056	<0.001	<0.001	<0.0002	0.0003	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0067
SD027	0861_SD027_211026	26/10/2021	EB2130850	0.0091	<0.0002	<0.0002	0.0008	<0.0002	0.0083	<0.0002	<0.001	0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0006	<0.0002	<0.0002	<0.0002	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0101
SD028	0861_SD028_211019	19/10/2021	EB2130835	0.0101	<0.0002	<0.0002	0.0011	<0.0002	0.009	<0.0002	<0.001	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0106
SD030	0861_SD030_211026	26/10/2021	EB2130850	0.143	0.0014	0.001	0.0111	0.0014	0.187	0.0008	0.002	0.0036	0.0048	0.0007	0.002	0.0026	0.0034	0.0072	0.002	0.0043	0.0069	<0.0002	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	0.0012	0.0008	0.0009	0.188
SD033	0861_SD033_211026	26/10/2021	EB2130850	0.323	0.0011	0.0013	0.0132	0.0016	0.31	0.0213	<0.001	0.0016	0.0043	0.0006	0.003	0.0003	0.0003	0.001	<0.0006	0.0005	0.0006	0.0034	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.364
SD034	0861_SD034_211019	19/10/2021	EB2130835	0.0054	<0.0005	<0.0005	<0.0008	<0.0005	0.0054	<0.0008	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0054
SD036	0861_SD036_211020	20/10/2021	EB2130835	<0.0005	<0.0005	<0.0005	<0.0006	<0.0005	<0.0044	<0.0006	<0.002	<0.0006	<0.0006	<0.0008	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0005	<0.0009	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0015	<0.0005
SD037	0861_SD037_211026	26/10/2021	EB2130850	0.038	0.0004	0.0004	0.0055	0.0006	0.0325	0.0003	<0.001	0.0005	0.0009	0.0003	0.0008	0.0003	0.0005	0.0004	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0434
SD038	0861_SD038_211025	25/10/2021	EB2130835	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD039	0861_SD039_211022	22/10/2021	EB2130815	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD040	0861_SD040_211019	19/10/2021	EB2130815	0.0039	<0.0002	<0.0002	0.0004	<0.0002	0.0035	<0.0034	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.0002	<0.0002	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0039
SD041	0861_SD041_211026	26/10/2021	EB2130850	0.193	0.0007	0.001	0.0149	0.0027	0.178	0.0016	<0.001	0.0008	0.0024	0.0004	0.0013	<0.0002	<0.0002	0.0005	<0.0006	<0.0002	0.0006	0.0007	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.206
SD043	0861_SD043_211022	22/10/2021	EB2130815	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD045	0861_SD045_211019	19/10/2021	EB2130815	0.0028	<0.0002	<0.0002	<0.0002	<0.0002	0.0028	<0.0002	<0.001	0.0002	0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0034
SD047	0861_SD047_211020	20/10/2021	EB2130835	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0016	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
SD048	0861_SD048_211026	26/10/2021	EB2130850	0.104	<0.0005	0.0007	0.0071	0.0009	0.0967	0.0019	<0.002	<0.0005	0.0015	<0.0005	0.0008	<0.0005	<0.0005	0.0019	0.0023	0.0021	0.001	0.0036	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	0.004	0.002	<0.0005	0.126
SD049	0861_SD049_211020	20/10/2021	EB2130835	0.13	<0.0012	<0.0012	0.0085	<0.0012	0.122	<0.0012	<0.006	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0031	<0.0012	<0.0012	<0.0012	<0.0031	<0.0031	<0.0031	<0.0031	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	0.13
SD050	0861_SD050_211019	19/10/2021	EB2130835	0.0034	<0.0002	<0.0002	0.0004	<0.0002	0.003	<0.0064	<0.001	0.0003	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0046
SD051	0861_SD051_211019	19/10/2021	EB2130835	0.0087	<0.0005	<0.0005	0.0009	<0.0005	0.0078	<0.0005	<0.002	0.0011	0.001	<0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0108
SD052	0861_SD052_211020	20/10/2021	EB2130835	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.006	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0031	<0.0012	<0.0012	<0.0012	<0.0031	<0.0031	<0.0031	<0.0031	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
SD053	0861_SD053_211025	25/10/2021	EB2130835	0.0357	<0.0002	<0.0002	0.0007	<0.0002	0.035	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.0002	<0.0002	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0357
SD056	0861_SD056_211026	26/10/2021	EB2130850	0.637	<0.001	<0.001	0.0083	0.0012	0.629	0.003	<0.005	0.0014	0.0021	<0.001	0.0012	<0.001	<0.001	0.0015	<0.0025	<0.001	0.0012	<0.001	<0.0025	<0.0025	<0.0025	<0.0025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.649
SD059	0861_SD059_211026	26/10/2021	EB2130850	0.12	0.0011	0.0013	0.0145	0.0018	0.106	0.007	<0.001	0.0029	0.0037	0.0011	0.0033	0.0009	0.0006	0.0007	<0.0006	<0.0002	0.001	0.0009	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.147
SD064	0861_SD064_211025	25/10/2021	EB2130835	0.104	0.0007	0.0008	0.009	0.0009	0.0945	0.0017	<0.003	0.001	0.0026	0.0004	0.0011	0.0003	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.113
SD067	0861_SD067_211025	25/10/2021	EB2130835	0.873	0.0068	0.0095	0.0926	0.0085	0.78	0.0183	0.008	0.0099	0.0314	0.0045	0.0116	0.0086	0.0078	0.0078	<0.0024	0.002	0.0056	0.0045	<0.0024	<0.0024	<0.0024	<0.0024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	1.02
SD076	0861_SD076_211026	26/10/2021	EB2130850	0.123	0.0004	0.0005	0.0063	0.0011	0.117	0.0022	<0.001	0.0009	0.0016	0.0005	0.0015	0.0008	0.0007	0.0005	<0.0005	<0.0002	0.0009	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.135
SD079	0861_SD079_211025	25/10/2021	EB2130835	0.0175	<0.0002	<0.0002	0.0013	<0.0002	0.0162	0.0004	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0005	<0.0002	<0.0002	0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0184
SD080	0861_SD080_211025	25/10/2021	EB2130835	0.998	0.0036	0.006	0.0954	0.014	0.903	0.024	<0.005	0.0021	0.0073	0.0024	0.0076	0.0048	0.0079	0.0248	0.0052	0.0091	0.027	0.0128	<0.0025	<0.0025	<0.0025	<0.0025	<0.001	0.0013	<0.001	0.0011	0.0048	0.0038	1.17
SD088	0861_SD088_211020	20/10/2021	EB2130835	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0003	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0003
SD089	0861_SD089_211020	20/10/2021	EB2130835	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0018	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0024	<0.001	<0.001	<0.001	<0.0024	<0.0024	<0.0024	<0.0024	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SD090	0861_SD090_211021	21/10/2021	EB2130850	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0042	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0004	<0.0002	<0.0002	<0.0006	<0.0006	<0.0006	<0.002	<0.0004	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD091	0861_SD091_211021	21/10/2021	EB2130835	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0016	<0.0004	<0.001	<0.0002	<0.0002	<0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.0012	<0.0002	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD094	0861_SD094_211022	22/10/2021	EB2130835	0.0036	<0.0002	<0.0002	<0.0002	<0.0002	0.0036	<0.0002	<0.001	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.0002	<0.0002	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.004
SD098	0861_SD098_211019	19/10/2021	EB2130815	0.002	<0.0002	<0.0002	<0.0002	<0.0002	0.002	<0.0002	<0.001	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0023
SD099	0861_SD099_211020	20/10/2021	EB2130835	0.0083	<0.0005	<0.0005	<0.0012	<0.0005	0.0083	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0015	0.0083
SD100	0861_SD100_211020	20/10/2021	EB2130835	0.0028	<0.0005	<0.0005	<0.0005	<0.0005	0.0028	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0028

LOR is limit of reporting
mg/kg is milligrams per kilogram
µg/kg is micrograms per kilogram
'-' denotes no analysis undertaken
'<' denotes concentration is less than
Denotes first time detection above LOR

Appendix C

Analytical Data Validation

Appendix C Analytical Data Validation

DATA VALIDATION REPORT

Project No.:	60612563	**Validation by:** CM		**Date:**	23/11/2021
Client:	Department of Defence				
Site:	Royal Australian Airforce Base, Amberley				
Matrix type:	Groundwater, surface water, sediment	**Data verified by:** JP		**Date:**	26/11/2021
No. of primary samples:	40 groundwater, 48 surface water, 49 sediment				
Laboratory:	ALS (Brisbane), NMI (Sydney)	**Project Manager:** JP			
Lab reference:	EB2130815; EB2130821; EB2130823; EB2130835; EB2130850; AECO06_211029 (RN1333717), EB2134318				

Key Issues:	Two groundwater samples (from MW057S and MW057I) reported anomalous results (report number EB2130835), which were considered to be due to mislabelling of the sample bottles. The wells were resampled with the results (reported on EB2134318) consistent with historical results. The results for MW057S and MW057I on EB2130835 have been disregarded with the results reported for EB2134318 used in replacement. No other QA/QC issues were identified in the field or laboratory datasets that could have a material implication on data interpretation and therefore decision-making on the project. The data are considered appropriate for use to meet the project objectives.

Field QA/QC

Sampling personnel	Sampling was conducted by AECOM environmental scientists between 19 and 28 October 2021 and on 26 November 2021.
Sampling Methodology	Samples were collected using appropriate methods as identified within the main body of the report and as presented in the SAQP.
Chain of Custody	COC documents completed as per AECOM procedures.
Rinsate Blank	Rinsate blank samples were collected at a frequency of one per day of sampling where appropriate (six in total) during the monitoring between 19 and 28 October 2021. Rinsates were collected from the decontaminated interface probe. On days where dedicated sampling equipment was used to obtain samples (e.g. hydrasleeves were being collected) no rinsates samples were required. Concentrations reported below the LOR for all analytes tested. See Table C4.
Field Blanks Trip Blanks	Field blank samples were collected at a frequency of one per day of sampling (nine in total between 19 and 28 October 2021) by filling sample containers with laboratory supplied deionised water in the field. A field blank was inadvertently not collected during a resampling visit conducted on 26 November 2021. All field blanks reported concentrations below the LOR for the analytes tested. See Table C4. The non-collection of the field blank on 26 November 2021 is not considered to impact data quality. Trip blank samples were present during the transport of samples during the sampling between 19 – 28 October 2021 for both the primary and secondary laboratory samples. Four water trip blanks and four soil trip blanks all reported concentrations below the LOR, see Table C5.
Frequency of field QC	Field duplicate (inter-laboratory duplicates) and triplicates (inter-laboratory duplicates) were collected. Nine duplicates/triplicate sets for groundwater and surface water (see

	Tables C1 and C2) and five duplicate/triplicate sets for sediment. The frequency of field QC achieves the expected frequency for each media type. The target frequency of one in ten primary samples was achieved for all matrices.
Handling and preservation	Primary, duplicate and triplicate samples were received preserved and chilled at the laboratory. All samples were received at the laboratory in appropriate sample containers with no sample container non-compliances noted.
Laboratory QA/QC	
Tests requested/reported	Samples were analysed and reported as requested on the COC.
Holding time compliance	Samples were extracted and analysed within recommended holding times.
Laboratory Accreditation	The laboratory analysis was conducted by ALS Environmental Pty Ltd (Brisbane) a National Association of Testing Authorities (NATA) accredited laboratory. The triplicate samples were analysed at the National Measurement Institute (Sydney), also a NATA accredited laboratory.
Frequency of laboratory QC	The laboratory reported a sufficient frequency of quality control samples to assess whether the results have been reported to an acceptable accuracy and precision, except: • Matrix spikes and laboratory duplicates for PFAS (both 0.00%) which is below the expected rate of 5.0% (for matrix spikes) and 10.00% (duplicates) in the following batches: o EB22130823 (19 samples in batch) o Laboratory duplicates (water) for PFAS (7.69%) which is below the expected rate of 10.00% in the following batches: o EB2130815 (13 samples in batch) o EB2130821 (13 samples in batch) o Laboratory duplicates (water) for PFAS (6.52%) which is below the expected rate of 10.00% in the following batches: o EB2130835 (46 samples in batch) o Laboratory duplicates (water) for PFAS (9.68%) which is below the expected rate of 10.00% in the following batches: o EB2130850 (31 samples in batch) o Matrix spikes (water) for PFAS (2.17%) which is below the expected rate of 5.00% in the following batches: o EB2130835 (46 samples in batch) The reason for insufficient matrix spikes and laboratory duplicates is unknown as the laboratory was provided with sufficient sample volume across the project batches, however as all other QC results met control limits this is not expected to impact data quality.
Method Blank	No method blank non-compliances were reported.
Laboratory duplicate RPDs	Laboratory duplicate Relative Percentage Differences (RPD) were within control limits for all samples.
Laboratory control spike recovery	No non-compliances were reported for Laboratory Control Spikes (LCS).
Matrix spike recovery	All matrix spike (MS) recoveries (where reported) were within control limits, except: • EB2130850: MS recovery for FOSA and 10:2 FTS were not determined as the recovery was greater than the upper data quality objective. This indicates that matrix interference may have occurred in isolated samples. These non-conformances are not expected to impact data quality.
Surrogate spike recovery	Surrogate spike recoveries were within control limits for all samples.

QA/QC Data Evaluation	
Comparison of Field Observations and Laboratory Results	No anomalous results between field observations and analysis results were noted.
Data transcription	A random 10% check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by AECOM.
Limits of reporting	Limits of Reporting (LORs) were sufficiently low to enable assessment against adopted screening levels except for PFOS for NEMP (HEPA, 2020) ecological guideline values for the 99% protection of freshwater species. The potential exists for concentrations of PFOS to be above the adopted guideline, but below the laboratory LOR. This should be taken into consideration when interpreting and using this data quantitatively where results are reported below LOR.
Field QAQC RPDs	RPDs for groundwater surface water and sediment samples are reported in Tables C1, C2 and C3 respectively. Field duplicate and triplicate RPDs were reported within control limits for all groundwater, surface water and sediment samples except the following (the sample with the higher concentration is in bold). • **0861_MW032_211025** and 0861_QC262_211025 for PFHxA (31%) • **0861_MW007_211027** and 0861_QC265_211027 for PFHpS (38%), PFHpA (41%), PFHxA (49%), PFPeS (33%), PFOS (56%), PFOA (45%) PFHxS (40%) • 0861_SD030_211026 and **0861_QC164_211026** for PFOS (34%) • 0861_SD030_211026 and **0861_QC264_211026** for PFUnDA (32%) The majority of the higher RPDs for groundwater and sediment are for the triplicate samples. The RPD results are not considered to impact the interpretation for this investigation but do demonstrate that there are differences in laboratory analysis and extraction methods in water and sediment samples. Many of the RPDs are related to low detected concentrations or near the limit of reporting. It is noted that the QC samples results were within the same order of magnitude as the primary sample. The elevated RPDs for the sediment samples is potentially also attributable to sample heterogeneity. Where the triplicate samples highlighted above reported a higher concentration than the primary sample, the higher triplicate sample concentrations do not constitute a first-time detection of PFOA or PFHxS+PFOS or a new maximum of the same concentrations and therefore the elevated RPDs are not considered to affect data interpretation for use in this report. The higher concentration has however conservatively been adopted in the report tables All remaining samples reported within the control limits.
Other	
Other observations	Comparison of the results for MW057S and MW057I sampled on 22 October 2021 on EB2130815 with historical results indicated anomalies. The 22 October 2021 results indicated PFAS not detected above the LOR in MW057S with PFAS detected in the sample from MW057I at concentrations exceeding the drinking water guideline. The historical results indicate the reverse- PFAS is typically not detected at MW057I and has consistently been detected in samples from MW057S. The results suggest the samples have been mislabelled, possible in the field during sampling. As a first step, the laboratory was asked to check the results and reextract the sample from the bottles supplied. The laboratory verified the original results. Subsequently, monitoring wells MW057S and MW057I were resampled on the 26 November 2021. The results of the resampling (reported in EB2134318) were consistent with historical results (i.e. PFAS no detected in the sample from MW057I). Therefore, the results reported for MW057S and MW057I on EB2130815 have been disregarded and the results collected on 26 November 2021 (EB2134318) have been used in replacement.

Table C1 Groundwater Duplicate and Triplicate Analytical Results

	Lab Report	EB2130835	EB2130835	RPD	RN1333717	RPD	EB2130850	EB2130850	RPD	RN1333717	RPD	EB2130850	EB2130850	RPD	RN1333717	RPD	EB2130850	EB2130850	RPD	RN1333717	RPD	EB2130850	EB2130850	RPD	RN1333717	RPD
	Sample ID	0861_MW002_211021	0861_QC157_211021		0861_QC257_211021		0861_MW032_211025	0861_QC162_211025		0861_QC262_211025		0861_MW042_211026	0861_QC163_211026		0861_QC263_211026		0861_MW007_211027	0861_QC165_211027		0861_QC265_211027		0861_MW012_211027	0861_QC166_211027		0861_QC266_211027	
	Sampled Date	21/10/2021 15:00	21/10/2021 15:00		21/10/2021 15:00		25/10/2021 15:00	25/10/2021 15:00		25/10/2021 15:00		26/10/2021 15:00	26/10/2021 15:00		26/10/2021 15:00		27/10/2021 15:00	27/10/2021 15:00		27/10/2021 15:00		27/10/2021 15:00	27/10/2021 15:00		27/10/2021 15:00	
	Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Analyte	**Units**	**EQL**																								
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.1	<0.1	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.1	<0.1	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	0.13	<0.1	26	0.11	17	<0.05	<0.05	0	<0.01	0	<0.15	0.12	0	0.085	0	<0.05	<0.05	0	<0.01	0
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.1	<0.1	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.25	<0.25	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.09	<0.11	0	<0.02	0	<0.05	<0.05	0	<0.02	0
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.1	<0.1	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.04	<0.04	0	<0.01	0	<0.02	<0.02	0	<0.01	0
EtFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.25	<0.25	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.09	<0.11	0	<0.05	0	<0.05	<0.05	0	<0.05	0
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.25	<0.25	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.09	<0.11	0	<0.02	0	<0.05	<0.05	0	<0.02	0
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.1	<0.1	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.04	<0.04	0	<0.01	0	<0.02	<0.02	0	<0.01	0
MeFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.25	<0.25	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.09	<0.11	0	<0.05	0	<0.05	<0.05	0	<0.05	0
PFBS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	1.68	1.65	2	1.5	11	<0.02	<0.04	0	0.012	0	2.13	2.04	4	1.6	28	<0.02	<0.02	0	<0.01	0
PFBA	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.5	<0.5	0	0.6	18	<0.1	<0.1	0	<0.05	0	0.4	0.4	0	0.45	12	<0.1	<0.1	0	<0.05	0
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.1	<0.1	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.04	<0.04	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.1	<0.1	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.04	<0.04	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.1	<0.1	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.04	<0.04	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFHpS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.86	0.81	6	0.68	23	<0.02	<0.02	0	<0.01	0	1.41	1.4	1	**0.96**	**38**	<0.02	<0.02	0	<0.01	0
PFHpA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.98	0.96	2	0.73	29	<0.02	<0.02	0	<0.01	0	0.59	0.57	3	**0.39**	**41**	<0.02	<0.02	0	<0.01	0
PFHxA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	4.36	4.41	1	**3.2**	**31**	<0.02	<0.02	0	<0.01	0	3.81	3.9	2	**2.3**	**49**	<0.02	<0.02	0	<0.01	0
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.1	<0.1	0	0.062	0	<0.02	<0.02	0	<0.01	0	<0.04	<0.04	0	<0.01	0	<0.02	<0.02	0	<0.01	0
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.1	<0.1	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.48	<0.42	0	0.13	0	<0.02	<0.02	0	<0.01	0
PFPeS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	1.5	1.57	5	1.4	7	<0.02	<0.02	0	<0.01	0	2.36	2.54	7	**1.7**	**33**	<0.02	<0.02	0	<0.01	0
PFPeA	µg/L	0.02	<0.02	<0.02	0	<0.02	0	0.76	0.77	1	0.73	4	<0.02	<0.02	0	<0.02	0	0.85	0.81	5	0.63	30	<0.02	<0.02	0	<0.02	0
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.25	<0.25	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.09	<0.11	0	<0.02	0	<0.05	<0.05	0	<0.02	0
PFTrDA	µg/L	0.02	<0.02	<0.02	0	<0.02	0	<0.1	<0.1	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.04	<0.04	0	<0.02	0	<0.02	<0.02	0	<0.02	0
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.1	<0.1	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.04	<0.04	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFOS	µg/L	0.01 : 0.02 (Interlab)	<0.01	<0.01	0	<0.02	0	24	23.6	2	18	29	0.03	0.02	40	0.04	29	33.9	33.6	1	**19**	**56**	0.02	0.02	0	0.024	18
PFOA	µg/L	0.01	<0.01	<0.01	0	<0.01	0	2.27	2.21	3	**1.6**	**35**	<0.02	<0.01	0	<0.01	0	1.35	1.37	1	**0.85**	**45**	<0.01	<0.01	0	<0.01	0
PFHxS	µg/L	0.01	<0.01	<0.01	0	<0.01	0	9.21	9.19	0	8.4	9	0.03	0.04	29	0.028	7	19.5	18.1	7	**13**	**40**	<0.01	<0.01	0	<0.01	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: no limit (<10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory
NC is not calculable

Table C2 Surface Water Duplicate and Triplicate Analytical Results

		Lab Report	EB2130835	EB2130835	RPD	RN1333717	RPD	EB2130835	EB2130835	RPD	RN1333717	RPD	EB2130815	EB2130835	RPD	RN1333717	RPD	EB2130835	EB2130835	RPD	RN1333717	RPD
		Field ID	0861_SW028_211019	0861_QC153_211019		0861_QC253_211019		0861_SW036_211020	0861_QC155_211020		0861_QC255_211020		0861_SW039_211022	0861_QC159_211022		0861_QC259_211022		0861_SW002_211025	0861_QC161_211025		0861_QC261_211025	
		Sampled Date	19/10/2021 15:00	19/10/2021 15:00		19/10/2021 15:00		20/10/2021 15:00	20/10/2021 15:00		20/10/2021 15:00		22/10/2021 15:34	22/10/2021 15:34		22/10/2021 15:34		25/10/2021 15:00	25/10/2021 15:00		25/10/2021 15:00	
		Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Analyte	**Units**	**EQL**																				
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	0.044	0
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
EtFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
MeFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
PFBS	µg/L	0.02 : 0.01 (Interlab)	0.06	0.05	18	0.048	22	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	0.07	0.07	0	0.055	24
PFBA	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	0.052	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	0.16	0.15	6	0.15	6
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFHpS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	0.01	0
PFHpA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	0.07	0.07	0	0.064	9
PFHxA	µg/L	0.02 : 0.01 (Interlab)	0.04	0.04	0	0.033	19	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	0.23	0.24	4	0.17	30
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	0.02	0.03	40	0.017	16
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFPeS	µg/L	0.02 : 0.01 (Interlab)	0.02	0.02	0	0.028	33	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	0.04	0.04	0	0.039	3
PFPeA	µg/L	0.02	0.02	0.02	0	0.022	10	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	0.25	0.24	4	0.21	17
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
PFTrDA	µg/L	0.02	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFOS	µg/L	0.01 : 0.02 (Interlab)	0.71	0.57	22	0.55	25	<0.01	<0.01	0	<0.02	0	<0.01	<0.01	0	<0.02	0	0.66	0.64	3	0.6	10
PFOA	µg/L	0.01	0.01	0.01	0	0.01	0	<0.01	<0.01	0	<0.01	0	<0.01	<0.01	0	<0.01	0	0.07	0.06	15	0.048	37
PFHxS	µg/L	0.01	0.27	0.25	8	0.24	12	<0.01	<0.01	0	<0.01	0	<0.01	<0.01	0	<0.01	0	0.4	0.39	3	0.35	13

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: no limit (<10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Table C3 Sediment Duplicate and Triplicate Analytical Results

Lab Report	EB2130835	EB2130835	RPD	RN1333717	RPD	EB2130835	EB2130835	RPD	RN1333717	RPD	EB2130835	EB2130835	RPD	RN1333717	RPD
Field ID	0861_SD028_211019	0861_QC154_211019		0861_QC254_211019		0861_SD036_211020	0861_QC156_211020		0861_QC256_211020		0861_SD021_211021	0861_QC158_211021		0861_QC258_211021	
Sampled Date	19/10/2021 16:24	19/10/2021 16:24		19/10/2021 16:24		20/10/2021 16:24	20/10/2021 16:24		20/10/2021 16:24		21/10/2021 16:24	21/10/2021 16:24		21/10/2021 16:24	
Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Analyte	**Units**	**EQL**													
10:2 FTS	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0	<0.0015	<0.0045	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0
4:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0
6:2 FtS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0
8:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0
EtFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0	<0.0012	<0.0012	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0
EtFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0
EtFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0012	<0.0012	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
MeFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0	<0.0012	<0.0012	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0
MFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0
MeFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0012	<0.0012	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
PFBS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	0.0003	0.0004	29	<0.001	0
PFBA	mg/kg	0.001	<0.001	<0.001	0	<0.002	0	<0.002	<0.002	0	<0.002	0	<0.001	<0.001	0	<0.002	0
PFDS	mg/kg	0.0002	<0.0002	<0.0002	0	<0.001	0	<0.0006	<0.0016	0	<0.001	0	0.0032	0.0041	25	0.002	46
PFDA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0
PFDoDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	<0.0012	<0.0018	0	<0.002	0	0.0004	0.0004	0	<0.002	0
PFHpS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	0.0002	0.0002	0	<0.001	0
PFHpA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0008	<0.0006	0	<0.001	0	0.0002	0.0004	67	<0.001	0
PFHxA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0006	<0.0006	0	<0.001	0	0.0009	0.0014	43	0.0012	29
PFNA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0002	0.0002	0	<0.001	0
FOSA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	0.0008	0.0012	40	<0.001	0
PFPeS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	0.0002	<0.0002	0	<0.001	0
PFPeA	mg/kg	0.0002 : 0.002 (Interlab)	0.0005	<0.0002	86	<0.002	0	<0.0006	<0.0005	0	<0.002	0	0.0004	0.0007	55	<0.002	0
PFTeDA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0	<0.0012	<0.0012	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0
PFTrDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	0.0004	0.0005	22	<0.002	0
PFUnDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	<0.0009	<0.0005	0	<0.002	0	0.0005	0.0006	18	<0.002	0
PFOS	mg/kg	0.0002 : 0.002 (Interlab)	0.009	0.0054	50	0.012	29	<0.0044	0.0043	0	0.0038	0	0.0284	0.0384	30	0.037	26
PFOA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	0.0005	0.0007	33	0.0011	75
PFHxS	mg/kg	0.0002 : 0.001 (Interlab)	0.0011	0.0006	59	0.0011	0	<0.0006	<0.0005	0	<0.001	0	0.0018	0.0029	47	0.0027	40

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: no limit (<10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory
NC is not calculable

Table C3 Sediment Duplicate and Triplicate Analytical Results

	Lab Report	EB2130815	EB2130835	RPD	RN1333717	RPD	EB2130850	EB2130850	RPD	RN1333717	RPD
	Field ID	0861_SD039_211022	0861_QC160_211022		0861_QC260_211022		0861_SD030_211026	0861_QC164_211026		0861_QC264_211026	
	Sampled Date	22/10/2021 15:00	22/10/2021 15:00		22/10/2021 15:00		26/10/2021 15:00	26/10/2021 15:00		26/10/2021 15:00	
	Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Analyte	**Units**	**EQL**									
10:2 FTS	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0	0.0009	0.0012	29	<0.002	0
4:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0
6:2 FtS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	0	<0.001	0	0.0012	0.0015	22	0.0024	67
8:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	0	<0.001	0	0.0008	0.0008	0	0.0017	72
EtFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0	<0.0006	<0.0006	0	<0.002	0
EtFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0
EtFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0006	<0.0006	0	<0.005	0
MeFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0	<0.0006	<0.0006	0	<0.002	0
MFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0
MeFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0006	<0.0006	0	<0.005	0
PFBS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	0.0014	0.0015	7	0.0011	24
PFBA	mg/kg	0.001	<0.001	<0.001	0	<0.002	0	0.002	0.002	0	<0.002	0
PFDS	mg/kg	0.0002	<0.0002	<0.0002	0	<0.001	0	0.0008	0.0007	13	<0.001	0
PFDA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	0.0034	0.0031	9	0.0033	3
PFDoDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	0.0072	0.0078	8	0.0058	22
PFHpS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	0.0014	0.0016	13	0.0013	7
PFHpA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	0.0007	0.0007	0	0.0013	60
PFHxA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	0.0002	0	<0.001	0	0.0048	0.0046	4	0.0046	4
PFNA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	0.0026	0.004	42	0.003	14
FOSA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0
PFPeS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	0.001	0.001	0	0.0014	33
PFPeA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	0.0003	40	<0.002	0	0.0036	0.004	11	0.005	33
PFTeDA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0	0.002	0.0019	5	<0.002	0
PFTrDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	0.0043	0.005	15	0.0038	12
PFUnDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	0.005	0.0049	2	**0.0069**	**32**
PFOS	mg/kg	0.0002 : 0.002 (Interlab)	<0.0003	0.0014	129	<0.002	0	**0.132**	**0.187**	**34**	0.16	19
PFOA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	0.002	0.0025	22	0.0024	18
PFHxS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	0.0111	0.0131	17	0.014	23

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: no limit (<10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary
NC is not calculable

Table C4 Field Blank and Rinsate Blank Analytical Results

	Lab Report	EB2130823	EB2130823	EB2130823	EB2130823	EB2130823	EB2130823	EB2130823	EB2130823	EB2130823	EB2130823	EB2130823	EB2130823	EB2130823	EB2130823	EB2130823
	Field ID	0861_QC442_211019	0861_QC443_211020	0861_QC444_211021	0861_QC445_211022	0861_QC446_211025	0861_QC447_211026	0861_QC448_211027	0861_QC449_211028	0861_QC338_211019	0861_QC339_211020	0861_QC340_211021	0861_QC341_211022	0861_QC342_211025	0861_QC344_211028	
	Sampled Date	19/10/2021 15:56	20/10/2021 15:56	21/10/2021 15:56	22/10/2021 15:56	25/10/2021 15:56	26/10/2021 15:56	27/10/2021 15:56	28/10/2021 15:56	19/10/2021 15:56	20/10/2021 15:56	21/10/2021 15:56	22/10/2021 15:56	25/10/2021 15:56	28/10/2021 15:56	
	Sample Type	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	
Analyte	**Units**	**EQL**														
10:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 FtS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EtFOSA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EtFOSAA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
EtFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MeFOSA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MFOSAA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MeFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PFBS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFBA	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
PFDS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFDoDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHpS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHpA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHxA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFNA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
FOSA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFPeS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFPeA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFTeDA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PFTrDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFUnDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFOA	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFHxS	µg/L	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

	Lab Report	EB2130823	RN1333717	EB2130823	EB2130823	EB2130823	RN1333717	EB2130823	EB2130823
	Field ID	0861_QC516_211019	0861_QC518_211019	0861_QC520_211022	0861_QC522_211026	0861_QC515_211019	0861_QC517_211019	0861_QC519_211022	0861_QC521_211026
	Sampled Date	19/10/2021 15:56	19/10/2021	22/10/2021 15:56	26/10/2021 15:56	19/10/2021 15:00	19/10/2021	22/10/2021 15:00	26/10/2021 15:00
	Sample Type	Trip Blank (water)	Trip Blank (water)	Trip Blank (water)	Trip Blank (water)	Trip Blank (soil)	Trip Blank (soil)	Trip Blank (soil)	Trip Blank (soil)
Analyte	**Units**	**EQL**								
10:2 FTS	µg/L	0.05	<0.05	<0.01	<0.05	<0.05	-	-	-	-
4:2 FTS	µg/L	0.05	<0.05	<0.01	<0.05	<0.05	-	-	-	-
6:2 FtS	µg/L	0.05	<0.05	<0.01	<0.05	<0.05	-	-	-	-
8:2 FTS	µg/L	0.05	<0.05	<0.01	<0.05	<0.05	-	-	-	-
EtFOSA	µg/L	0.05	<0.05	<0.02	<0.05	<0.05	-	-	-	-
EtFOSAA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	-	-	-	-
EtFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-
MeFOSA	µg/L	0.05	<0.05	<0.02	<0.05	<0.05	-	-	-	-
MFOSAA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	-	-	-	-
MeFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	-
PFBS	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	-	-	-	-
PFBA	µg/L	0.1	<0.1	<0.05	<0.1	<0.1	-	-	-	-
PFDS	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	-	-	-	-
PFDA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	-	-	-	-
PFDoDA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	-	-	-	-
PFHpS	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	-	-	-	-
PFHpA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	-	-	-	-
PFHxA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	-	-	-	-
PFNA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	-	-	-	-
FOSA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	-	-	-	-
PFPeS	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	-	-	-	-
PFPeA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-	-
PFTeDA	µg/L	0.05	<0.05	<0.02	<0.05	<0.05	-	-	-	-
PFTrDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	-	-	-	-
PFUnDA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	-	-	-	-
PFOS	µg/L	0.01	<0.01	<0.02	<0.01	<0.01	-	-	-	-
PFOA	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	-
PFHxS	µg/L	0.02	<0.01	<0.01	<0.01	<0.01	-	-	-	-
10:2 FTS	mg/kg	0.0005	-	-	-	-	<0.0005	<0.002	<0.0005	<0.0005
4:2 FTS	mg/kg	0.0005	-	-	-	-	<0.0005	<0.001	<0.0005	<0.0005
6:2 FtS	mg/kg	0.0005	-	-	-	-	<0.0005	<0.001	<0.0005	<0.0005
8:2 FTS	mg/kg	0.0005	-	-	-	-	<0.0005	<0.001	<0.0005	<0.0005
EtFOSA	mg/kg	0.0005	-	-	-	-	<0.0005	<0.002	<0.0005	<0.0005
EtFOSAA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.002	<0.0002	<0.0002
EtFOSE	mg/kg	0.0005	-	-	-	-	<0.0005	<0.005	<0.0005	<0.0005
MeFOSA	mg/kg	0.0005	-	-	-	-	<0.0005	<0.002	<0.0005	<0.0005
MFOSAA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.002	<0.0002	<0.0002
MeFOSE	mg/kg	0.0005	-	-	-	-	<0.0005	<0.005	<0.0005	<0.0005
PFBS	mg/kg	0.0002	-	-	-	-	<0.0002	<0.001	<0.0002	<0.0002
PFBA	mg/kg	0.001	-	-	-	-	<0.001	<0.002	<0.001	<0.001
PFDS	mg/kg	0.0002	-	-	-	-	<0.0002	<0.001	<0.0002	<0.0002
PFDA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.001	<0.0002	<0.0002
PFDoDA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.002	<0.0002	<0.0002
PFHpS	mg/kg	0.0002	-	-	-	-	<0.0002	<0.001	<0.0002	<0.0002
PFHpA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.001	<0.0002	<0.0002
PFHxA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.001	<0.0002	<0.0002
PFNA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.001	<0.0002	<0.0002
FOSA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.001	<0.0002	<0.0002
PFPeS	mg/kg	0.0002	-	-	-	-	<0.0002	<0.001	<0.0002	<0.0002
PFPeA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.002	<0.0002	<0.0002
PFTeDA	mg/kg	0.0005	-	-	-	-	<0.0005	<0.002	<0.0005	<0.0005
PFTrDA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.002	<0.0002	<0.0002
PFUnDA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.002	<0.0002	<0.0002
PFOS	mg/kg	0.0002	-	-	-	-	<0.0002	<0.002	<0.0002	<0.0002
PFOA	mg/kg	0.0002	-	-	-	-	<0.0002	<0.001	<0.0002	<0.0002
PFHxS	mg/kg	0.0002	-	-	-	-	<0.0002	<0.001	<0.0002	<0.0002

Appendix D

Chain of Custody Forms

Appendix D Chain of Custody Forms

Bunch

AECOM — **Chain of Custody** — COC Page 1 of 2

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no.

Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr (5 days))	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request - **SEDIMENTS** + water

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0861_SW039_211022	22/10/21		X						8P	X		Extra vol Lab dup & MS
2	0861_SD039_211022	"	X							1P	X		
3	0861_SW043_211022	"		X						2P	X		
4	0861_SD043_211022	"	X							1P	X		
5	0861_SW025_211022	"		X						2P	X		
6	0861_SD025_211022	"	X							1P	X		
7	0861_SW026_211020	20/10/21		X						2P	X		
8	0861_SD026_211020	"	X							1P	X		
9	0861_SW098-211019	19/10/21		X						2P	X		
10	0861_SD098_211019	"	X							1P	X		
11	0861_SW045_211019	"		X						2P	X		
12	0861_SD045_211019	"	X							1P	X		
13	0861_SW040_211019	"		X						2P	X		
14	0861_SD040_211019	"	X							1P	X		

Environmental Division
Brisbane
Work Order Reference
EB2130815

Telephone: [redacted]

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by: [redacted] Signed: [redacted] Date: 28/10/21
Received by: [redacted] 28/10 1250 Signed: Date:

Relinquished by: Signed: Date:
Received by: Signed: Date:

Council

AECOM — **Chain of Custody** — COC Page 2 of 2

AECOM Australia Pty Ltd Level 8, 540 Wickham Street Fortitude Valley, QLD, 4006 PO Box 1307 Fortitude Valley QLD 4006	**Email reports to:** [redacted]
Laboratory Details Lab. Name: Lab. Address: Contact Name: Lab. Ref:	Tel: Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no.

Specifications: Please report in ESdat format	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	
6. Report Format: ESdat	7. Project Manager [redacted]

Analysis Request - **SEDIMENTS** + water

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
15	0861_MW056D_211022	22/10/21		Y						2P	X		
16	0861_MW056S_211022	22/10/21		X						2P	X		
17	0861_MW057D_211022	"		X						2P	X		
16	0861_MW057S_211022	"		X						2P	X		
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Signed: [redacted] Date: 28/10/21

Received by: [redacted] 28/10 1250 Signed: Date:

Relinquished by: Signed: Date:

Received by: Signed: Date:

offsite

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. : [redacted]
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr (5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0861_MW054S-211028	28/10/21		X						2P	X		
2	0861_MW054D-211028	"		X						2P	X		
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Environmental Division
Brisbane
Work Order Reference
EB2130821

Telephone [redacted]

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by: [redacted] Signed: [redacted] Date: 28/10/21

Received by: [redacted] 28/10 1250 Signed: Date:

Relinquished by: Signed: Date:

Received by: Signed: Date:

QC500, 400, 500s

AECOM — **Chain of Custody** — COC Page 1 of 2

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. [redacted]

Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr (5 days))	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Environmental Division Brisbane
Work Order Reference
EB2130823

Telephone: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request - SEE: EP231X (PFAS Std 28)	HOLD	
1	0861_QC338-211019	19/10/21		X						2P	X		
2	0861_QC515_211019	"	X							1P	X		Tripblank 092352
3	0861_QC516-211019	"		X						2P	X		Tripblank 290926
4	0861_QC442-211019	"		X						2P	X		
5	0861_QC 443-211020	20/10/21		X						2P	X		
6	0861_QC444-211021	21/10/21		X						2P	X		
7	0861_QC339-211020	20/10/21		X						2P	X		
8	0861_QC340-211021	21/10/21		X						2P	X		
9	0861_QC445-211022	22/10/21		X						2P	X		
10	0861_QC341-211022	"		X						2P	X		
11	0861_QC342-211025	25/10/21		X						2P	X		
12	0861_QC446-211025	"		X						2P	X		
13	0861_QC519-211022	22/10/21	X							1P	X		Tripblank 092351
14	0861_QC520-211022	"		X						2P	X		Tripblank 290928

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by: [redacted] Signed: [redacted] Date: 28/10/21

Received by: [redacted] 28/10/1250 Signed: Date:

Relinquished by: Signed: Date:

Received by: Signed: Date:

QC300, 400, 500

AECOM — **Chain of Custody** — COC Page 2 of 2

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no.
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request - **SEDIMENTS + Water**

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
15	0861_QC447-211026	26/10/21		X						2P	X		
16	0861_QC521-211026	"	X							1P	X		TB 092355 ✓
17	0861_QC522-211026	"		X						2P	X		TB 290925 ✓
18	0861_QC448-211026	27/10/21		X						2P	X		
	0861_MW006-211027	"		X						2P	X		Doubled up.
	0861_MW023-211027	"		X						2P	X		
	0861_MW007-211027	"		X						2P	X		
	0861_QC165-211027	"		X						2P	X		
19	0861_QC449-211028	28/10/21		X						2P	X		
20	0861_QC344-211028	"		X						2P	X		
	0861_												
21	0861_QC343	26/10/21											
	0861_												
	0861_												

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**
Temp. received: °C
Report & invoice: [redacted]
Lab Report No: Esky ID:

Relinquished by: [redacted] Signed: [redacted] Date: 28/10/21
Received by: [redacted] 28/10 1250 Signed: Date:
Relinquished by: Signed: Date:
Received by: Signed: Date:

AECOM — **Chain of Custody** — COC Page 1 of 11

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name: ALS
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. :

Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0861_SD006-211019	19/10/21	X							2 x 20ml	X		
2	0861_SW016-211019	"		X						1 x Jar	X		
3	0861_SD0064-211019	"	X							2 x 200ml	X		
4	0861_SW004-211019	"		X						2 x 200ml	X		
5	0861_SD005-211019	"	X							1 x 200ml	X		
6	0861_SW005-211019	"		X						2 x 20ml	X		
7	0861_SW015-211019	"		X						2 x 20ml	X		
8	0861_SD015-211019	"	X							1 x Jar	X		
9	0861_SW020-211019	"		X						2P	X		
10	0861_SD020_211019	"	X							1P	X		
11	0861_SW018_211019	"		X						2P	X		
12	0861_SD018_211019	"	X							1P	X		
13	0861_SW034-211019	"		X						2P	X		
14	0861_SD034-211019	"	X							1P	X		

Environmental Division
Brisbane
Work Order Reference
EB2130835

Telephone : [redacted]

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted] Signed: [redacted] Date: 28/10/21

Received by: [redacted] 28/10 1250 Signed: Date:

Relinquished by: Signed: Date:

Received by: Signed: Date:

AECOM — **Chain of Custody** — COC Page 2 of 11

AECOM Australia Pty Ltd Level 8, 540 Wickham Street Fortitude Valley, QLD, 4006 PO Box 1307 Fortitude Valley QLD 4006	**Email reports to:** [redacted]	**Laboratory Details** Lab. Name: Lab. Address: Contact Name: Lab. Ref:
		Tel: Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no.

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request - **SEDIMENTS + Water**

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
15	0861_SW028_211019	19/10/21								2x20mL	X		
16	0861_SD028_211019	"								1x Jar	X		
17	0861_QC154_211019	"	X							1x Jar	X		
18	0861_QC153_211019	"		X						2x20mL	X		
19	0861_SW051_211019	"		X						2x20mL	X		
20	0861_SD051_211019	"	X							1x Jar	X		
	~~0861_SW098_211019~~	"		X						2P			
	~~0861_SD098_211019~~	"	X							1P			
	~~0861_SW045_211019~~	"		X						2P			
	~~0861_SD045_211019~~	"	X							1P			
	~~0861_SD060_211019~~	"	X							~~2P~~ 1P			
	~~0861_SW050_211019~~	"		X						2P			
21	0861_SW050_211019	"		X						1P	X		
22	0861_SD050_211019	"	X							1P	X		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: j[redacted]

Lab Report No: Esky ID:

Relinquished by:		Signed:	Date:	Relinquished by:	Signed: Date:
Received by:	[illegible] 28/10 1250	Signed:	Date:	Received by:	Signed: Date:

AECOM

Chain of Custody

COC Page 3 of 11

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no.

Specifications: Please report in ESdat format — Yes (tick)

1. Urgent TAT required? (please circle: 24hr 48hr 5 days)
2. Fast TAT Guarantee Required?
3. Is any sediment layer present in waters to be excluded from extractions?
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?
5. Special storage requirements? (details: _____)
6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request - **SEDIMENTS** + water

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
23	0861_QC155_211020	20/10/21		X						2P	X		
24	0861_QC156_211020	"	X							1P	X		
25	0861_SW036_211020	"		X						2P	X		EDD + MS ethanol
26	0861_SD036_211020	"	X							1P	X		
–	~~0861_SD026_211020~~	"	X							~~1P~~			
–	~~0861_SD SW026_211020~~	"		X						~~2P~~			
27	0861_SD099_211020	"	X							1P	X		
28	0861_SW099_211020	"		X						2P	X		
29	0861_SD100_211020	"	X							1P	X		
30	0861_SW100_211020	"		X						2P	X		
31	0861_SD047_211020	"	X							1P	X		
32	0861_SW047_211020	"		X						2P	X		
33	0861_SW088_211020	"		X						2P	X		
34	0861_SD088_211020	"	X							1P	X		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: Signed: Date:

Received by: [illegible] 28/10 1250 Signed: Date:

Relinquished by: Signed: Date:

Received by: Signed: Date:

AECOM — **Chain of Custody** — COC Page 4 of 11

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no.

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager [redacted]

Analysis Request - **SEDIMENTS + Water**

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
35	0861_SD052_211020	20/10/21	X							1P	X		
36	0861_SW052_211020	"		X						2P.	X		
37	0861_SD059_211020	"	X							1P	X		
38	0861_SW059_211020	"		X						2P	X		
39	0861_SD049_211020	"	X							1P	X		
40	0861_SW049_211020	"		X						2P	X		
41	0861_MW002_211021	21/10/21		X						2P	X		
42	0861_QC157_211021	"		X						2P	X		
43	0861_SD021_211021	"	X							1P	X		
44	0861_QC158_211021	"	X							1P	X		
45	0861_SW021_211021	"		X						8P	X		add vol lab dup & MS.
46	0861_MW030_211021	"		X						8P	X		Volume for lab dup + MS.
47	0861_MW031_211021	"		X						2P	X		
48	0861_MW034_211021	"		X						2P	X		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice [redacted]

Lab Report No: Esky ID:

Relinquished by: Signed: Date:

Received by: [signature] 28/10/1250 Signed: Date:

Relinquished by: Signed: Date:

Received by: Signed: Date:

AECOM

Chain of Custody

COC Page 5 of 11

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006
Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no.

Specifications: Please report in ESdat format	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request - **SEDIMENTS** + water

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
49	0861_SD091_211021	21/10/21	X							1P	X		
50	0861_SW091_211021	"		X						2P	X		
51	0861_MW036_211021	"		X						2P	X		
52	0861_MW028_211021	"		X						2P	X		
53	0861_MW029_211021	"		X						2P	X		
54	0861_MW044_211021	"		X						2P	X		
55	0861_MW024_211021	"		X						2P	X		
56	0861_MW055D_211021	"		X						2P	X		
57	0861_MW055S_211021	"		X						2P	X		
58	0861_MW035_211021	"		X						2P	X		
59	0861_MW022_211021	"		X						2P	X		
60	0861_MW049_211021	"		X						2P	X		
61	0861_MW048_211021	"		X						2P	X		
~~62~~	~~0861_SW039_211021~~	~~22/10/21~~		X						2P	X		~~Extra vol taken for QA~~

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by:	Signed:	Date:	Relinquished by:	Signed:	Date:
Received by:	Signed:	Date:	Received by:	Signed:	Date:

28/10 (2:5)

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Chain of Custody

COC Page 6 of 11

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no.

Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request - **SEDIMENTS** + ~~water~~

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
~~-~~	~~0861_SD039_211022~~	~~22/10/21~~	~~X~~							~~1P~~	~~X~~		
62	0861_QC159_211022	"		X						2P	X		
63	0861_QC160_211022	"	X							1P	X		
64	0861_MW041_211022	22/10/21		X						2P	X		
65	0861_SW003_211022	"		X						2P	X		
66	0861_SD003_211022	"	X							1P	X		
67	0861_SW094_211022	"		X						2P	X		
68	0861_SD094_211022	"	X							1P	X		
69	0861_SW009_211022	"		X						2P	X		
-	0861_~~SW60~~												
70	0861_SD009_211022	"	X							1P	X		
71	0861_SW064_211025	"		X						2P	X		
72	0861_SD064_211025	"	X							1P	X		
-	0861_QC												

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by:		Signed:	Date:	Relinquished by:	Signed: Date:
Received by:	[illegible] 28/10 1252	Signed:	Date:	Received by:	Signed: Date:

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Chain of Custody

COC Page 7 of 11

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no.
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request - **SEDIMENTS + water**

Lab. ID.	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
—	0861_ QC												
73	0861_SD067-211025	25/10/21	X							1P	X		
74	0861_SW067-211025	"		X						2P	X		
75	0861_SD079-211025	"	X							1P	X		
76	0861_SW079_211025	"		X						8P	X		Lab matrix spikes
77	0861_SD080-211025	"	X							1P	X		
78	0861_SW080-211025	"		X						2P	X		
79	0861_SD053-211025	"	X							1P	X		
80	0861_SW053-211025	"		X						2P	X		
81	0861_SD038_211025	"	X							1P	X		
82	0861_SW038_211025	"		X						2P	X		
83	0861_QC161-211025	"		X						2P	X		
84	0861_SD002-211025	"	X							1P	X		
85	0861_SW002_211025	"		X						2P	X		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**
Temp. received: °C
Report & invoice [redacted]
Lab Report No | Esky ID

Relinquished by: Signed: Date:
Received by: [illegible] 28/10 (25) Signed: Date:
Relinquished by: Signed: Date:
Received by: Signed: Date:

AECOM

Chain of Custody

COC Page 8 of 11

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no.
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request - **SEDIMENTS + water**

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0861_QC162-211025	25/10/21		X						2P	X		
2	0861_MW032-211025			X						2P	X		
3	0861_SD008-211026	26/10/21	X							1P	X		
4	0861_SW008-211026	"		X						2P	X		
5	0861_SD027_211026	"	X							1P	X		
6	0861_SW027_211026	"		X						2P	X		
7	0861_SD011_211026	"	X							1P	X		
8	0861_SW011-211026	"		X						2P	X		
9	0861_SD056_211026	"	X							1P	X		
10	0861_SW056-211026	"		X						2P	X		
11	0861_SD033-211026	"	X							1P	X		
12	0861_SW033_211026	"		X						2P	X		
13	0861_MW042-211026	"		X						2P	X		
14	0861_MW043-211026	"		X						~~3P~~ 8P	X		Matrix Spikes volume.

Environmental Division
Brisbane
Work Order Reference
EB2130850

Telephone : [redacted]

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

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Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by: Signed: Date:
Received by: Signed: Date:

Relinquished by: Signed: Date:
Received by: Signed: Date:

AECOM

Chain of Custody

COC Page 9 of 11

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no.
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request - **SEDIMENTS** + Waters

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
15	0861_QC163_211026	26/10/21		X						2P	X		
16	0861_SD059_211026	"	X							1P	X		
17	0861_SW059_211026	"		X						2P	X		
18	0861_SD037_211026	"	X							1P	X		
19	0861_SW037_211026	"		X						2P	X		
20	0861_SD076_211026	"	X							1P	X		
21	0861_SW076_211026	"		X						2P	X		
22	0861_SW030_211026	"		X						2P	X		
23	0861_QC164_211026	"	X							1P	X		
24	0861_SD030_211026	"	X							1P	X		
25	0861_MW309_211026	"	X	X						2P	X		
26	0861_SD048_211026	"	X							1P	X		
27	0861_MW047_211026	"		X						2P	X		
28	0861_SD041_211026	"	X							1P	X		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME
Temp. received: °C
Report & invoice: [redacted]
Lab Report No | Esky ID

Relinquished by: Signed: Date:
Received by: 28/10 1250 Signed: Date:
Relinquished by: Signed: Date:
Received by: Signed: Date:

AECOM — **Chain of Custody** — COC Page 10 of 11

AECOM Australia Pty Ltd	**Laboratory Details**	Tel:
Level 8, 540 Wickham Street	Lab. Name:	Fax:
Fortitude Valley, QLD, 4006	Lab. Address:	Preliminary Report by:
PO Box 1307 Fortitude Valley QLD 4006	Contact Name:	Final Report by:
Email reports to: [redacted]	Lab. Ref:	Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no.

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request - **SEDIMENTS** + water

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
29	0861_SW041_211026	26/10/21		X						2P	X		
30	0861_MW046_211026	"		X						2P	X		
31	0861_MW006_211027	27/10/21		X						2P	X		
32	0861_MW023_211027	"		X						2P	X		
33	0861_QC165_211027	"		X						2P	X		
34	0861_MW007_211027	"		X						2P	X		
35	0861_MW025_211027	"		X						8P	X		MS+LD Volume.
36	0861_MW033_211027	"		X						8P	X		Vol for MS+LD.
37	0861_MW026_211027	"		X						6P	X		MS+LD Vol.
38	0861_MW037_211027	"		X						6P	X		MS+LD Vol.
39	0861_MW020_211027	"		X						6P	X		MS+LD Vol.
40	0861_MW012_211027	"		X						2P	X		
41	0861_QC166_211027	"		X						2P	X		
42	0861_MW005_211027	"		X						2P	X		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by:		Signed:	Date:	Relinquished by:	Signed: Date:
Received by:	[signature] 26/10 1255	Signed:	Date:	Received by:	Signed: Date:

AECOM — **Chain of Custody** — COC Page 11 of 11

AECOM Australia Pty Ltd Level 8, 540 Wickham Street Fortitude Valley, QLD, 4006 PO Box 1307 Fortitude Valley QLD 4006	**Email reports to:** [redacted]	**Laboratory Details** Lab. Name: Lab. Address: Contact Name: Lab. Ref:
		Tel: Fax: Preliminary Report by: Final Report by: Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no. :

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
43	0861_MW050_211028	28/10/21		X						2P	X		
44	0861_MW021_211028			X						2P	X		
	0861_~~QC344-2~~ ~~211021~~												
45	0861_SW090_211021												
46	0861_SD090-211021												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by:		Signed:	Date:	Relinquished by:	Signed: Date:
Received by:	[signature] 28/10 1250	Signed:	Date:	Received by:	Signed: Date:

AECOO6 | 211029 AM QC200's 5/11

AECOM — **Chain of Custody** — COC Page 1 of 2

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name: NMI
Lab. Address: [redacted]
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no.

Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request - SEDIMENTS

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
N21/024155	0861_QC255_211019	19/10/21		X						2x 20mL	X		
N21/024156	0861_QC254_211019	"	X							1x Jar	X		
N21/024157	0861_QC255_211020	20/10/21		X						6x 20mL	X		CD + MS extra vol
N21/024158	0861_QC256_211020	"	X							1x Jar	X		
N21/024159	0861_QC257_211021	21/10/21		X						2P	X		
N21/024160	0861_QC258_211021	"	X							1P	X		
N21/024161	0861_QC259_211022	22/10/21		X						2P	X		
N21/024162	0861_QC260_211022	"	X							1P	X		
N21/024163	0861_QC261_211025	25/10/21		X						2P	X		
N21/024164	0861_QC262_211025	"		X						2P	X		
N21/024165	0861_QC517_211019	19/10/21	X							1P	X		Tripblank 092356
N21/024166	0861_QC518_211019	19/10/21		X						2P	X		Tripblank 290923.
N21/024167	0861_QC263_211026	26/10/21		X						2P	X		
N21/024168	0861_QC264_211026	26/10/21	X							1P	X		

RECEIVED 29 OCT 2021 BY: N.N. 8:40

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME
Temp. received: °C
Report & invoice: [redacted]
Lab Report No: Esky ID:

Relinquished by: [redacted] Signed: [redacted] Date: 28/10/21
Received by: Signed: Date:
Relinquished by: Signed: Date:
Received by: Signed: Date:

QL200

AECOM

Chain of Custody

COC Page 2 of 2

AECOM Australia Pty Ltd
Level 8, 540 Wickham Street
Fortitude Valley, QLD, 4006
PO Box 1307 Fortitude Valley QLD 4006

Email reports to: [redacted]

Laboratory Details
Lab. Name: NMI
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
N21/024169	0861_QL205-211027	27/10/21		X						2P	X		
N21/024170	0861_QL206-211027	"		X						2P	X		
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

RECEIVED
20 OCT 2021
BY:

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**
Temp. received: °C
Report & invoice: [redacted]
Lab Report No: Esky ID:

Relinquished by: [redacted] Signed: [redacted] Date: 28/10/21
Received by: Signed: Date:
Relinquished by: Signed: Date:
Received by: Signed: Date:

Appendix E

Laboratory Analytical Certificates and QA/QC Reports

Appendix E Laboratory Analytical Certificates and QA/QC Reports

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2130815**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	:	Telephone	:
Facsimile	:	Facsimile	:
Project	: 60612563 3.1 QLD_0861_PFASOMP	Page	: 1 of 3
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 28-Oct-2021 12:50	Issue Date	: 01-Nov-2021
Client Requested Due Date	: 05-Nov-2021	Scheduled Reporting Date	: **05-Nov-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Intact.
No. of coolers/boxes	: 3	Temperature	: 5.0°C, 9.8°C, 6.2°C - Ice present
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 18 / 18

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2130815-002	22-Oct-2021 00:00	0861_SD039_211022	✓	✓
EB2130815-004	22-Oct-2021 00:00	0861_SD043_211022	✓	✓
EB2130815-006	22-Oct-2021 00:00	0861_SD025_211022	✓	✓
EB2130815-008	20-Oct-2021 00:00	0861_SD026_211020	✓	✓
EB2130815-010	19-Oct-2021 00:00	0861_SD098_211019	✓	✓
EB2130815-012	19-Oct-2021 00:00	0861_SD045_211019	✓	✓
EB2130815-014	19-Oct-2021 00:00	0861_SD040_211019	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2130815-001	22-Oct-2021 00:00	0861_SW039_211022	✓
EB2130815-003	22-Oct-2021 00:00	0861_SW043_211022	✓
EB2130815-005	22-Oct-2021 00:00	0861_SW025_211022	✓
EB2130815-007	20-Oct-2021 00:00	0861_SW026_211020	✓
EB2130815-009	19-Oct-2021 00:00	0861_SW098_211019	✓
EB2130815-011	19-Oct-2021 00:00	0861_SW045_211019	✓
EB2130815-013	19-Oct-2021 00:00	0861_SW040_211019	✓
EB2130815-015	22-Oct-2021 00:00	0861_MW56D_211022	✓
EB2130815-016	22-Oct-2021 00:00	0861_MW56S_211022	✓
EB2130815-017	22-Oct-2021 00:00	0861_MW057D_211022	✓
EB2130815-018	22-Oct-2021 00:00	0861_MW057S_211022	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- A4 - AU Tax Invoice (INV) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2130815**	Page	: 1 of 13
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 28-Oct-2021 12:50
Order number	: 60612563 3.1	Date Analysis Commenced	: 02-Nov-2021
C-O-C number	: ----	Issue Date	: 05-Nov-2021 16:32
Sampler	: NEM KRCO		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 18		
No. of samples analysed	: 18		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X PFAS: The LOR for particular analytes have been raised for some samples due to matrix interference.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X PFAS: Sample "0861_SD040_211019" required dilution due to sample matrix. LOR values have been adjusted accordingly and matrix spike recovery not determined.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD039_211022	0861_SD043_211022	0861_SD025_211022	0861_SD026_211020	0861_SD098_211019
				Sampling date / time	22-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00	20-Oct-2021 00:00	19-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130815-002	EB2130815-004	EB2130815-006	EB2130815-008	EB2130815-010
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**39.0**	**36.1**	**50.0**	**39.5**	**31.6**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0006**	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0003	<0.0002	<0.0007	**0.0056**	**0.0020**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0014	<0.0010	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	**0.0003**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0003**	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0002**	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD039_211022	0861_SD043_211022	0861_SD025_211022	0861_SD026_211020	0861_SD098_211019
				Sampling date / time	22-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00	20-Oct-2021 00:00	19-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130815-002	EB2130815-004	EB2130815-006	EB2130815-008	EB2130815-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0067**	**0.0023**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0062**	**0.0020**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0067**	**0.0023**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**106**	**106**	**115**	**84.0**	**77.5**
13C8-PFOA	----	0.0002	%		**102**	**104**	**95.0**	**105**	**81.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD045_211019	0861_SD040_211019	----	----	----
				Sampling date / time	19-Oct-2021 00:00	19-Oct-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2130815-012	EB2130815-014	--------	--------	--------
					Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**40.7**	**35.1**	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	**0.0004**	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0028**	**0.0035**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0034	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		**0.0002**	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0002**	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		**0.0002**	<0.0002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0006	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0006	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD045_211019	0861_SD040_211019	----	----	----
				Sampling date / time	19-Oct-2021 00:00	19-Oct-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2130815-012	EB2130815-014	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0006	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0006	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0006	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0034**	**0.0039**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0028**	**0.0039**	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0034**	**0.0039**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**97.0**	**118**	----	----	----
13C8-PFOA	----	0.0002	%		**97.0**	**97.5**	----	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW039_211022	0861_SW043_211022	0861_SW025_211022	0861_SW026_211020	0861_SW098_211019
				Sampling date / time	22-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00	20-Oct-2021 00:00	19-Oct-2021 00:00
					EB2130815-001	EB2130815-003	EB2130815-005	EB2130815-007	EB2130815-009
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	**0.02**	**0.06**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.05**	**0.10**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.02**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.03**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW039_211022	0861_SW043_211022	0861_SW025_211022	0861_SW026_211020	0861_SW098_211019
				Sampling date / time	22-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00	20-Oct-2021 00:00	19-Oct-2021 00:00
					EB2130815-001	EB2130815-003	EB2130815-005	EB2130815-007	EB2130815-009
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	**0.07**	**0.21**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.07**	**0.16**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	**0.07**	**0.21**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.4**	**94.3**	**93.5**	**104**	**86.3**
13C8-PFOA	----	0.02	%		**93.8**	**96.7**	**95.0**	**94.3**	**91.8**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW045_211019	0861_SW040_211019	0861_MW56D_211022	0861_MW56S_211022	0861_MW057D_211022
				Sampling date / time	19-Oct-2021 00:00	19-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00
					EB2130815-011	EB2130815-013	EB2130815-015	EB2130815-016	EB2130815-017
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.14**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.09**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.03**	**0.05**	<0.01	<0.01	**0.41**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.06**	**0.10**	**0.01**	<0.01	**0.08**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.02**	<0.02	<0.02	**0.08**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.02**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW045_211019	0861_SW040_211019	0861_MW56D_211022	0861_MW56S_211022	0861_MW057D_211022
				Sampling date / time	19-Oct-2021 00:00	19-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00
					EB2130815-011	EB2130815-013	EB2130815-015	EB2130815-016	EB2130815-017
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.09**	**0.17**	**0.01**	<0.01	**0.82**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.09**	**0.15**	**0.01**	<0.01	**0.49**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.09**	**0.17**	**0.01**	<0.01	**0.73**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.6**	**97.9**	**92.7**	**95.8**	**97.0**
13C8-PFOA	----	0.02	%		**93.7**	**94.1**	**94.0**	**93.2**	**96.6**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW057S_211022	----	----	----	----
				Sampling date / time	22-Oct-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2130815-018	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW057S_211022	----	----	----	----
				Sampling date / time	22-Oct-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2130815-018	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.3**	----	----	----	----
13C8-PFOA	----	0.02	%		**94.1**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EB2130815**	Page	: 1 of 14
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 28-Oct-2021
Order number	: 60612563 3.1	Date Analysis Commenced	: 02-Nov-2021
C-O-C number	: ----	Issue Date	: 05-Nov-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 18		
No. of samples analysed	: 18		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3989294)									
EB2130697-001	Anonymous	EA055: Moisture Content	----	0.1	%	13.4	14.0	5.1	0% - 50%
EB2130850-007	Anonymous	EA055: Moisture Content	----	0.1	%	29.6	29.7	0.0	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3989321)									
EB2130815-012	0861_SD045_211019	EA055: Moisture Content	----	0.1	%	40.7	42.6	4.6	0% - 20%
EB2130835-068	Anonymous	EA055: Moisture Content	----	0.1	%	33.6	33.0	2.0	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3989292)									
EB2130697-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0017	0.0017	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2130850-007	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0013	0.0014	7.8	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	0.0008	0.0008	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0075	0.0065	14.2	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0008	0.0006	20.2	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0731	0.0706	3.4	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0008	<0.0008	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3989320)									
EB2130815-012	0861_SD045_211019	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3989320) - continued									
EB2130815-012	0861_SD045_211019	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0028	0.0027	6.1	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2130835-068	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0036	0.0043	17.0	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3989292)									
EB2130697-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2130850-007	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0140	0.0134	4.3	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0096	0.0089	7.4	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0043	0.0042	2.7	0% - 50%
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0016	0.0014	13.8	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	0.0006	0.0005	25.2	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0012	0.0008	31.8	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0017	0.0014	18.4	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0018	0.0017	8.2	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	0.0004	0.0005	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	0.005	0.005	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3989320)									
EB2130815-012	0861_SD045_211019	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0002	0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0002	0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0002	0.0003	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3989320) - continued									
EB2130815-012	0861_SD045_211019	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2130835-068	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.0003	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.0003	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3989292)									
EB2130697-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2130850-007	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3989320)									
EB2130815-012	0861_SD045_211019	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2130835-068	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3989292)									
EB2130697-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2130850-007	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3989292) - continued									
EB2130850-007	Anonymous	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3989320)									
EB2130815-012	0861_SD045_211019	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2130835-068	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3988256)									
EB2130815-007	0861_SW026_211020	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.02	0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.05	0.03	41.4	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3988256)									
EB2130815-007	0861_SW026_211020	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3988256)									
EB2130815-007	0861_SW026_211020	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3988256)									
EB2130815-007	0861_SW026_211020	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 3988256)									
EB2130815-007	0861_SW026_211020	EP231X: Sum of PFAS	----	0.01	µg/L	0.07	0.04	54.5	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.07	0.04	54.5	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.07	0.04	54.5	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3989292)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	85.4	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	95.7	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	74.6	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	100	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	76.3	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	88.3	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3989320)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	76.8	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	94.9	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	78.8	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	99.2	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	88.4	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	99.6	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3989292)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	86.7	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.6	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.4	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.4	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	75.6	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.2	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.2	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.2	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.8	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.0	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	86.4	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3989320)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	89.4	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.4	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.6	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.6	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.8	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.2	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.2	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	81.2	64.0	136

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3989320) - continued								
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.0	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.6	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	91.0	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3989292)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	85.9	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	91.2	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	85.2	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	80.8	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.0	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	93.2	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3989320)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	88.1	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	86.5	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	95.5	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	81.9	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.0	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.8	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3989292)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	87.2	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	100	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	79.6	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	87.9	54.8	124
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3989320)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	88.5	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	97.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	108	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	90.0	54.8	124

Sub-Matrix: **WATER**

	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
		Spike	Spike Recovery (%)	Acceptable Limits (%)

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3988256)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	104	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	111	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	114	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	115	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	112	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	113	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3988256)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	112	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	108	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	108	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	110	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	112	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	114	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	115	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	110	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	109	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	109	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3988256)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	110	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	129	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	122	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	114	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	112	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	105	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	135	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3988256)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	109	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	117	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	118	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	132	64.2	133
EP231P: PFAS Sums (QCLot: 3988256)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231P: PFAS Sums (QCLot: 3988256) - continued								
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3989292)							
EB2130697-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	88.6	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	90.6	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	81.4	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	101	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	81.1	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	91.2	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3989320)							
EB2130815-014	0861_SD040_211019	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	# Not Determined	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	# Not Determined	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	# Not Determined	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	# Not Determined	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3989292)							
EB2130697-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	92.0	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	88.4	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	93.2	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	91.6	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	81.2	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	92.4	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	95.6	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	90.8	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	90.8	69.0	135

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3989292) - continued							
EB2130697-002	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	88.4	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	90.9	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3989320)							
EB2130815-014	0861_SD040_211019	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	# Not Determined	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	# Not Determined	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	# Not Determined	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	# Not Determined	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	# Not Determined	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	# Not Determined	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	# Not Determined	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	# Not Determined	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	# Not Determined	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	# Not Determined	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3989292)							
EB2130697-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	86.4	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	95.5	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	87.7	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	94.9	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	77.7	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	93.2	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	93.2	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3989320)							

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3989320) - continued							
EB2130815-014	0861_SD040_211019	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	# Not Determined	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	# Not Determined	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	# Not Determined	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3989292)							
EB2130697-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	92.7	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	86.0	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	92.9	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	105	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3989320)							
EB2130815-014	0861_SD040_211019	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	# Not Determined	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	# Not Determined	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	# Not Determined	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	# Not Determined	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3988256)							
EB2130815-001	0861_SW039_211022	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	109	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	97.4	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	99.5	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	95.6	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	102	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	105	53.0	142

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3988256)							
EB2130815-001	0861_SW039_211022	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	114	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	106	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	102	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	96.6	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	106	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	111	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	98.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	105	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	108	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	108	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	99.7	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3988256)							
EB2130815-001	0861_SW039_211022	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	114	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	98.8	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	96.1	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	95.5	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	95.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	107	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	113	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3988256)							
EB2130815-001	0861_SW039_211022	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	103	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	100	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	99.8	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	124	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2130815**	Page	: 1 of 7
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 28-Oct-2021
Site	: ----	Issue Date	: 05-Nov-2021
Sampler	: [redacted]	No. of samples received	: 18
Order number	: 60612563 3.1	No. of samples analysed	: 18

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	13	7.69	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)	*Sample Date*	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) 0861_SD098_211019, 0861_SD045_211019, 0861_SD040_211019	**19-Oct-2021**	**----**	----	----	**02-Nov-2021**	02-Nov-2021	✓
HDPE Soil Jar (EA055) 0861_SD026_211020	**20-Oct-2021**	**----**	----	----	**02-Nov-2021**	03-Nov-2021	✓
HDPE Soil Jar (EA055) 0861_SD039_211022, 0861_SD043_211022, 0861_SD025_211022	**22-Oct-2021**	**----**	----	----	**02-Nov-2021**	05-Nov-2021	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD098_211019, 0861_SD045_211019, 0861_SD040_211019	**19-Oct-2021**	**02-Nov-2021**	17-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD026_211020	**20-Oct-2021**	**02-Nov-2021**	18-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD039_211022, 0861_SD043_211022, 0861_SD025_211022	**22-Oct-2021**	**02-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0861_SD098_211019, 0861_SD045_211019, 0861_SD040_211019	**19-Oct-2021**	**02-Nov-2021**	17-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD026_211020	**20-Oct-2021**	**02-Nov-2021**	18-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD039_211022, 0861_SD043_211022, 0861_SD025_211022	**22-Oct-2021**	**02-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides								
HDPE Soil Jar (EP231X) 0861_SD098_211019, 0861_SD040_211019	0861_SD045_211019,	**19-Oct-2021**	**02-Nov-2021**	17-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD026_211020		**20-Oct-2021**	**02-Nov-2021**	18-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD039_211022, 0861_SD025_211022	0861_SD043_211022,	**22-Oct-2021**	**02-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE Soil Jar (EP231X) 0861_SD098_211019, 0861_SD040_211019	0861_SD045_211019,	**19-Oct-2021**	**02-Nov-2021**	17-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD026_211020		**20-Oct-2021**	**02-Nov-2021**	18-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD039_211022, 0861_SD025_211022	0861_SD043_211022,	**22-Oct-2021**	**02-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
EP231P: PFAS Sums								
HDPE Soil Jar (EP231X) 0861_SD098_211019, 0861_SD040_211019	0861_SD045_211019,	**19-Oct-2021**	**02-Nov-2021**	17-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD026_211020		**20-Oct-2021**	**02-Nov-2021**	18-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD039_211022, 0861_SD025_211022	0861_SD043_211022,	**22-Oct-2021**	**02-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X) 0861_SW098_211019, 0861_SW040_211019	0861_SW045_211019,	**19-Oct-2021**	**03-Nov-2021**	17-Apr-2022	✓	**03-Nov-2021**	17-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW026_211020		**20-Oct-2021**	**03-Nov-2021**	18-Apr-2022	✓	**03-Nov-2021**	18-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW039_211022, 0861_SW025_211022, 0861_MW56S_211022, 0861_MW057S_211022	0861_SW043_211022, 0861_MW56D_211022, 0861_MW057D_211022,	**22-Oct-2021**	**03-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	20-Apr-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0861_SW098_211019, 0861_SW045_211019, 0861_SW040_211019	**19-Oct-2021**	**03-Nov-2021**	17-Apr-2022	✓	**03-Nov-2021**	17-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW026_211020	**20-Oct-2021**	**03-Nov-2021**	18-Apr-2022	✓	**03-Nov-2021**	18-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW039_211022, 0861_SW043_211022, 0861_SW025_211022, 0861_MW56D_211022, 0861_MW56S_211022, 0861_MW057D_211022, 0861_MW057S_211022	**22-Oct-2021**	**03-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	20-Apr-2022	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0861_SW098_211019, 0861_SW045_211019, 0861_SW040_211019	**19-Oct-2021**	**03-Nov-2021**	17-Apr-2022	✓	**03-Nov-2021**	17-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW026_211020	**20-Oct-2021**	**03-Nov-2021**	18-Apr-2022	✓	**03-Nov-2021**	18-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW039_211022, 0861_SW043_211022, 0861_SW025_211022, 0861_MW56D_211022, 0861_MW56S_211022, 0861_MW057D_211022, 0861_MW057S_211022	**22-Oct-2021**	**03-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	20-Apr-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_SW098_211019, 0861_SW045_211019, 0861_SW040_211019	**19-Oct-2021**	**03-Nov-2021**	17-Apr-2022	✓	**03-Nov-2021**	17-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW026_211020	**20-Oct-2021**	**03-Nov-2021**	18-Apr-2022	✓	**03-Nov-2021**	18-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW039_211022, 0861_SW043_211022, 0861_SW025_211022, 0861_MW56D_211022, 0861_MW56S_211022, 0861_MW057D_211022, 0861_MW057S_211022	**22-Oct-2021**	**03-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	20-Apr-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0861_SW098_211019, 0861_SW045_211019, 0861_SW040_211019	**19-Oct-2021**	**03-Nov-2021**	17-Apr-2022	✓	**03-Nov-2021**	17-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW026_211020	**20-Oct-2021**	**03-Nov-2021**	18-Apr-2022	✓	**03-Nov-2021**	18-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW039_211022, 0861_SW043_211022, 0861_SW025_211022, 0861_MW56D_211022, 0861_MW56S_211022, 0861_MW057D_211022, 0861_MW057S_211022	**22-Oct-2021**	**03-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	20-Apr-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2130821**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Page	: 1 of 3
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 28-Oct-2021 12:50	Issue Date	: 01-Nov-2021
Client Requested Due Date	: 05-Nov-2021	Scheduled Reporting Date	: **05-Nov-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 5.0°C - Ice present
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2130821-001	28-Oct-2021 00:00	0861_MW054S_211028	✓
EB2130821-002	28-Oct-2021 00:00	0861_MW054D_211028	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2130821**	Page	: 1 of 7
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]5
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 28-Oct-2021 12:50
Order number	: 60612563 3.1	Date Analysis Commenced	: 03-Nov-2021
C-O-C number	: ----	Issue Date	: 05-Nov-2021 16:33
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist - PFAS	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X-INJ PFAS: Sample "0861_MW054S_211028" required dilution due to sample matrix. LOR values have been adjusted accordingly.
- 231X-INJ PFAS by LCMSMS: Sample '0861_MW054S_211028' has been tested to the legacy QSM 5.1 aligned, NATA accredited method due to sample matrix being unsuitable for SPE extraction (high sediment content).
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.
- EP231X-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where only a single sample container is received.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW054S_211028	0861_MW054D_211028	----	----	----
				Sampling date / time	28-Oct-2021 00:00	28-Oct-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2130821-001	EB2130821-002	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.05	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.05	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.05	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.05	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.07**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.05	----	----	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		----	<0.01	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		<0.25	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.05	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.05	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.05	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.05	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.05	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.05	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.05	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW054S_211028	0861_MW054D_211028	----	----	----
				Sampling date / time	28-Oct-2021 00:00	28-Oct-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2130821-001	EB2130821-002	--------	--------	--------
					Result	Result	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.05	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.12	----	----	----	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		----	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.12	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.12	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.12	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.12	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW054S_211028	0861_MW054D_211028	----	----	----
				Sampling date / time	28-Oct-2021 00:00	28-Oct-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2130821-001	EB2130821-002	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		----	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		----	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		----	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.07**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW054S_211028	0861_MW054D_211028	----	----	----
				Sampling date / time	28-Oct-2021 00:00	28-Oct-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2130821-001	EB2130821-002	--------	--------	--------
					Result	Result	----	----	----
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.07**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.07**	----	----	----	----
Sum of PFAS	----	0.01	µg/L		----	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		----	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		----	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		----	**99.8**	----	----	----
13C4-PFOS	----	0.02	%		**98.3**	----	----	----	----
13C8-PFOA	----	0.02	%		----	**94.9**	----	----	----
13C8-PFOA	----	0.02	%		**98.1**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2130821**	Page	: 1 of 9
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 28-Oct-2021
Order number	: 60612563 3.1	Date Analysis Commenced	: 03-Nov-2021
C-O-C number	: ----	Issue Date	: 05-Nov-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 2		
No. of samples analysed	: 2		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist - PFAS	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3988256)									
EB2130815-007	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.02	0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.05	0.03	41.4	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3992654)									
EB2130821-001	0861_MW054S_211028	EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.07	0.07	0.0	No Limit
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.05	<0.05	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3988256)									
EB2130815-007	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3988256) - continued									
EB2130815-007	Anonymous	EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3992654)									
EB2130821-001	0861_MW054S_211028	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.25	<0.25	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3988256)									
EB2130815-007	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3992654)									
EB2130821-001	0861_MW054S_211028	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3992654) - continued									
EB2130821-001	0861_MW054S_211028	EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.12	<0.12	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3988256)									
EB2130815-007	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3992654)									
EB2130821-001	0861_MW054S_211028	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 3988256)									
EB2130815-007	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.07	0.04	54.5	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.07	0.04	54.5	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.07	0.04	54.5	No Limit
EP231P: PFAS Sums (QC Lot: 3992654)									
EB2130821-001	0861_MW054S_211028	EP231X-INJ: Sum of PFAS	----	0.01	µg/L	0.07	0.07	0.0	No Limit
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.07	0.07	0.0	No Limit
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.07	0.07	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3988256)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	104	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	111	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	114	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	115	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	112	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	113	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3992654)								
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.444 µg/L	73.9	72.0	130
EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.47 µg/L	81.9	71.0	127
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.475 µg/L	76.2	68.0	131
EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.477 µg/L	92.0	69.0	134
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.4646 µg/L	73.4	65.0	140
EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	84.0	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3988256)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	112	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	108	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	108	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	110	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	112	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	114	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	115	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	110	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	109	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	109	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3992654)								
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	83.3	73.0	129
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	82.6	72.0	129
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	79.0	72.0	129
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	77.0	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	75.4	71.0	133
EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	81.4	69.0	130
EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	82.0	71.0	129
EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	78.6	69.0	133

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3992654) - continued								
EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	80.6	72.0	134
EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	77.6	65.0	144
EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	82.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3988256)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	110	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	129	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	122	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	114	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	112	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	105	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	135	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3992654)								
EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	77.8	67.0	137
EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	92.0	68.0	141
EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	84.4	62.1	136
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	86.5	65.2	135
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	74.2	63.2	135
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	82.0	65.0	136
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	92.4	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3988256)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	109	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	117	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	118	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	132	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3992654)								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.469 µg/L	79.5	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.476 µg/L	76.0	64.0	140
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.48 µg/L	87.1	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.483 µg/L	84.9	62.2	139
EP231P: PFAS Sums (QCLot: 3988256)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231P: PFAS Sums (QCLot: 3988256) - continued								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 3992654)								
EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3988256)							
EB2130815-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	109	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	97.4	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	99.5	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	95.6	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	102	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	105	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3992654)							
EB2130845-006	Anonymous	EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.443 µg/L	70.6	70.0	130
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.47 µg/L	78.7	70.0	130
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.475 µg/L	73.7	70.0	130
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.477 µg/L	86.2	70.0	130
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	70.2	70.0	130
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.482 µg/L	81.1	70.0	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3988256)							
EB2130815-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	114	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	106	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	102	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	96.6	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	106	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	111	69.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3988256) - continued							
EB2130815-001	Anonymous	EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	98.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	105	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	108	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	108	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	99.7	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3992654)							
EB2130845-006	Anonymous	EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	84.9	70.0	130
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	80.8	70.0	130
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	87.6	70.0	130
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	73.4	70.0	130
		EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	70.0	70.0	130
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	81.6	70.0	130
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	78.2	70.0	130
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	80.0	70.0	130
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	82.6	70.0	130
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	79.8	70.0	130
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	78.2	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3988256)							
EB2130815-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	114	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	98.8	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	96.1	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	95.5	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	95.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	107	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	113	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3992654)							
EB2130845-006	Anonymous	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	73.6	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	93.7	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	80.9	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	81.1	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3992654) - continued							
EB2130845-006	Anonymous	EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	76.1	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	84.2	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	92.4	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3988256)							
EB2130815-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	103	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	100	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	99.8	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	124	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3992654)							
EB2130845-006	Anonymous	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.468 µg/L	75.0	70.0	130
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.475 µg/L	81.0	70.0	130
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.48 µg/L	92.9	70.0	130
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.483 µg/L	90.7	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2130821**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 28-Oct-2021
Site	: ----	Issue Date	: 05-Nov-2021
Sampler	: [redacted]	No. of samples received	: 2
Order number	: 60612563 3.1	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	13	7.69	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / Client Sample ID(s)	***Sample Date***	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_MW054D_211028	**28-Oct-2021**	**03-Nov-2021**	26-Apr-2022	✓	**03-Nov-2021**	26-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_MW054S_211028	**28-Oct-2021**	**05-Nov-2021**	26-Apr-2022	✓	**05-Nov-2021**	26-Apr-2022	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0861_MW054D_211028	**28-Oct-2021**	**03-Nov-2021**	26-Apr-2022	✓	**03-Nov-2021**	26-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_MW054S_211028	**28-Oct-2021**	**05-Nov-2021**	26-Apr-2022	✓	**05-Nov-2021**	26-Apr-2022	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0861_MW054D_211028	**28-Oct-2021**	**03-Nov-2021**	26-Apr-2022	✓	**03-Nov-2021**	26-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_MW054S_211028	**28-Oct-2021**	**05-Nov-2021**	26-Apr-2022	✓	**05-Nov-2021**	26-Apr-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_MW054D_211028	**28-Oct-2021**	**03-Nov-2021**	26-Apr-2022	✓	**03-Nov-2021**	26-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_MW054S_211028	**28-Oct-2021**	**05-Nov-2021**	26-Apr-2022	✓	**05-Nov-2021**	26-Apr-2022	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0861_MW054D_211028	**28-Oct-2021**	**03-Nov-2021**	26-Apr-2022	✓	**03-Nov-2021**	26-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_MW054S_211028	**28-Oct-2021**	**05-Nov-2021**	26-Apr-2022	✓	**05-Nov-2021**	26-Apr-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with mobile phase solvent. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.

Preparation Methods	Method	Matrix	Method Descriptions
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2130823**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Page	: 1 of 3
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 28-Oct-2021 12:50	Issue Date	: 01-Nov-2021
Client Requested Due Date	: 05-Nov-2021	Scheduled Reporting Date	: **08-Nov-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 5.0°C, 9.8°C, 6.2°C - Ice present
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 21 / 20

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **The laboratory acknowledges your requested reporting date of 5 days, however due to the analytical request and associated procedures involved the requested due date will not be possible. Please note the best practical due date has been assigned.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **An extra sample was received labelled as "QC343" (ALS #21) and has been placed on hold. If testing is required on this sample, please contact ALS Client Services at** [redacted]
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2130823-002	19-Oct-2021 00:00	0861_QC515_211019	✓	✓
EB2130823-013	22-Oct-2021 00:00	0861_QC519_211022	✓	✓
EB2130823-016	26-Oct-2021 00:00	0861_QC521_211026	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) WATER No analysis requested	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2130823-001	19-Oct-2021 00:00	0861_QC338_211019		✓
EB2130823-003	19-Oct-2021 00:00	0861_QC516_211019		✓
EB2130823-004	19-Oct-2021 00:00	0861_QC442_211019		✓
EB2130823-005	20-Oct-2021 00:00	0861_QC443_211020		✓
EB2130823-006	21-Oct-2021 00:00	0861_QC444_211021		✓
EB2130823-007	20-Oct-2021 00:00	0861_QC339_211020		✓
EB2130823-008	21-Oct-2021 00:00	0861_QC340_211021		✓
EB2130823-009	22-Oct-2021 00:00	0861_QC445_211022		✓
EB2130823-010	22-Oct-2021 00:00	0861_QC341_211022		✓
EB2130823-011	25-Oct-2021 00:00	0861_QC342_211025		✓
EB2130823-012	25-Oct-2021 00:00	0861_QC446_211025		✓
EB2130823-014	22-Oct-2021 00:00	0861_QC520_211022		✓
EB2130823-015	26-Oct-2021 00:00	0861_QC447_211026		✓
EB2130823-017	26-Oct-2021 00:00	0861_QC522_211026		✓
EB2130823-018	27-Oct-2021 00:00	0861_QC448_211027		✓
EB2130823-019	28-Oct-2021 00:00	0861_QC449_211028		✓
EB2130823-020	28-Oct-2021 00:00	0861_QC344_211028		✓
EB2130823-021	26-Oct-2021 00:00	0861_QC343_211026	✓	

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2130823**	Page	: 1 of 13
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 28-Oct-2021 12:50
Order number	: 60612563 3.1	Date Analysis Commenced	: 02-Nov-2021
C-O-C number	: ----	Issue Date	: 05-Nov-2021 15:24
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 21		
No. of samples analysed	: 20		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Senior Organic Chemist - PFAS	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X PFAS: Matrix spike recovery not determined due to dilution of primary sample.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_QC515_211019	0861_QC519_211022	0861_QC521_211026	----	----
			Sampling date / time	19-Oct-2021 00:00	22-Oct-2021 00:00	26-Oct-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	EB2130823-002	EB2130823-013	EB2130823-016	--------	--------
				Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**0.2**	**0.3**	**0.3**	**----**	**----**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	**----**	**----**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	**----**	**----**
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**----**	**----**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	**----**	**----**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_QC515_211019	0861_QC519_211022	0861_QC521_211026	----	----
				Sampling date / time	19-Oct-2021 00:00	22-Oct-2021 00:00	26-Oct-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2130823-002	EB2130823-013	EB2130823-016	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**91.5**	**108**	**85.5**	----	----
13C8-PFOA	----	0.0002	%		**106**	**95.5**	**102**	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC338_211019	0861_QC516_211019	0861_QC442_211019	0861_QC443_211020	0861_QC444_211021
				Sampling date / time	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	20-Oct-2021 00:00	21-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130823-001	EB2130823-003	EB2130823-004	EB2130823-005	EB2130823-006
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC338_211019	0861_QC516_211019	0861_QC442_211019	0861_QC443_211020	0861_QC444_211021
				Sampling date / time	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	20-Oct-2021 00:00	21-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130823-001	EB2130823-003	EB2130823-004	EB2130823-005	EB2130823-006
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.5**	**98.2**	**91.7**	**96.6**	**94.2**
13C8-PFOA	----	0.02	%		**93.6**	**97.1**	**98.1**	**99.3**	**99.6**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC339_211020	0861_QC340_211021	0861_QC445_211022	0861_QC341_211022	0861_QC342_211025
				Sampling date / time	20-Oct-2021 00:00	21-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00	25-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130823-007	EB2130823-008	EB2130823-009	EB2130823-010	EB2130823-011
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC339_211020	0861_QC340_211021	0861_QC445_211022	0861_QC341_211022	0861_QC342_211025
				Sampling date / time	20-Oct-2021 00:00	21-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00	25-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130823-007	EB2130823-008	EB2130823-009	EB2130823-010	EB2130823-011
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**95.6**	**81.6**	**87.7**	**96.4**	**91.6**
13C8-PFOA	----	0.02	%		**94.4**	**96.7**	**93.6**	**93.9**	**99.9**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC446_211025	0861_QC520_211022	0861_QC447_211026	0861_QC522_211026	0861_QC448_211027
				Sampling date / time	25-Oct-2021 00:00	22-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	27-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130823-012	EB2130823-014	EB2130823-015	EB2130823-017	EB2130823-018
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC446_211025	0861_QC520_211022	0861_QC447_211026	0861_QC522_211026	0861_QC448_211027
				Sampling date / time	25-Oct-2021 00:00	22-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	27-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130823-012	EB2130823-014	EB2130823-015	EB2130823-017	EB2130823-018
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**104**	**99.1**	**92.8**	**88.0**	**96.3**
13C8-PFOA	----	0.02	%		**93.1**	**94.3**	**96.9**	**95.2**	**93.4**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC449_211028	0861_QC344_211028	----	----	----
				Sampling date / time	28-Oct-2021 00:00	28-Oct-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2130823-019	EB2130823-020	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC449_211028	0861_QC344_211028	----	----	----
				Sampling date / time	28-Oct-2021 00:00	28-Oct-2021 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2130823-019	EB2130823-020	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**86.4**	**106**	----	----	----
13C8-PFOA	----	0.02	%		**97.2**	**94.6**	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2130823**	Page	: 1 of 8
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 28-Oct-2021
Order number	: 60612563 3.1	Date Analysis Commenced	: 02-Nov-2021
C-O-C number	: ----	Issue Date	: 05-Nov-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 21		
No. of samples analysed	: 20		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Senior Organic Chemist - PFAS	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3989321)									
EB2130815-012	Anonymous	EA055: Moisture Content	----	0.1	%	40.7	42.6	4.6	0% - 20%
EB2130835-068	Anonymous	EA055: Moisture Content	----	0.1	%	33.6	33.0	2.0	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3989320)									
EB2130815-012	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0028	0.0027	6.1	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2130835-068	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0036	0.0043	17.0	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3989320)									
EB2130815-012	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0002	0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0002	0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0002	0.0003	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3989320) - continued									
EB2130815-012	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2130835-068	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.0003	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.0003	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3989320)									
EB2130815-012	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2130835-068	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3989320)									
EB2130815-012	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2130835-068	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3989320)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	76.8	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	94.9	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	78.8	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	99.2	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	88.4	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	99.6	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3989320)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	89.4	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.4	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.6	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.6	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.8	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.2	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.2	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	81.2	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.0	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.6	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	91.0	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3989320)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	88.1	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	86.5	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	95.5	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	81.9	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.0	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.8	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3989320)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	88.5	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	97.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	108	65.0	137

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3989320) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	90.0	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3988257)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	115	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	112	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	115	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	106	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	106	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	104	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3988257)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	109	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	110	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	108	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	111	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	118	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	116	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	111	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	117	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	121	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	118	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	111	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3988257)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	96.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	134	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	122	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	105	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	121	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	101	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	108	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3988257)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	114	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	107	64.0	140

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3988257) - continued								
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	91.0	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	116	64.2	133
EP231P: PFAS Sums (QCLot: 3988257)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3989320)							
EB2130815-014	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	# Not Determined	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	# Not Determined	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	# Not Determined	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	# Not Determined	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3989320)							
EB2130815-014	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	# Not Determined	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	# Not Determined	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	# Not Determined	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	# Not Determined	69.0	133

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3989320) - continued							
EB2130815-014	Anonymous	EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	# Not Determined	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	# Not Determined	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	# Not Determined	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	# Not Determined	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	# Not Determined	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	# Not Determined	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3989320)							
EB2130815-014	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	# Not Determined	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	# Not Determined	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	# Not Determined	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3989320)							
EB2130815-014	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	# Not Determined	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	# Not Determined	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	# Not Determined	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	# Not Determined	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2130823**	Page	: 1 of 7
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 28-Oct-2021
Site	: ----	Issue Date	: 05-Nov-2021
Sampler	: [redacted]	No. of samples received	: 21
Order number	: 60612563 3.1	No. of samples analysed	: 20

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	19	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	19	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)	*Sample Date*	*Extraction / Preparation* Date extracted	Due for extraction	Evaluation	*Analysis* Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) 0861_QC515_211019	**19-Oct-2021**	**----**	----	----	**02-Nov-2021**	02-Nov-2021	✓
HDPE Soil Jar (EA055) 0861_QC519_211022	**22-Oct-2021**	**----**	----	----	**02-Nov-2021**	05-Nov-2021	✓
HDPE Soil Jar (EA055) 0861_QC521_211026	**26-Oct-2021**	**----**	----	----	**02-Nov-2021**	09-Nov-2021	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_QC515_211019	**19-Oct-2021**	**02-Nov-2021**	17-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC519_211022	**22-Oct-2021**	**02-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC521_211026	**26-Oct-2021**	**02-Nov-2021**	24-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0861_QC515_211019	**19-Oct-2021**	**02-Nov-2021**	17-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC519_211022	**22-Oct-2021**	**02-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC521_211026	**26-Oct-2021**	**02-Nov-2021**	24-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0861_QC515_211019	**19-Oct-2021**	**02-Nov-2021**	17-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC519_211022	**22-Oct-2021**	**02-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC521_211026	**26-Oct-2021**	**02-Nov-2021**	24-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_QC515_211019	**19-Oct-2021**	**02-Nov-2021**	17-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC519_211022	**22-Oct-2021**	**02-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC521_211026	**26-Oct-2021**	**02-Nov-2021**	24-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0861_QC515_211019	**19-Oct-2021**	**02-Nov-2021**	17-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC519_211022	**22-Oct-2021**	**02-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC521_211026	**26-Oct-2021**	**02-Nov-2021**	24-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_QC338_211019, 0861_QC516_211019, 0861_QC442_211019	**19-Oct-2021**	**04-Nov-2021**	17-Apr-2022	✓	**04-Nov-2021**	17-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC443_211020, 0861_QC339_211020	**20-Oct-2021**	**04-Nov-2021**	18-Apr-2022	✓	**04-Nov-2021**	18-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC444_211021, 0861_QC340_211021	**21-Oct-2021**	**04-Nov-2021**	19-Apr-2022	✓	**04-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC445_211022, 0861_QC341_211022, 0861_QC520_211022	**22-Oct-2021**	**04-Nov-2021**	20-Apr-2022	✓	**04-Nov-2021**	20-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC342_211025, 0861_QC446_211025	**25-Oct-2021**	**04-Nov-2021**	23-Apr-2022	✓	**04-Nov-2021**	23-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC447_211026, 0861_QC522_211026	**26-Oct-2021**	**04-Nov-2021**	24-Apr-2022	✓	**04-Nov-2021**	24-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC448_211027	**27-Oct-2021**	**04-Nov-2021**	25-Apr-2022	✓	**04-Nov-2021**	25-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC449_211028, 0861_QC344_211028	**28-Oct-2021**	**04-Nov-2021**	26-Apr-2022	✓	**04-Nov-2021**	26-Apr-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X) 0861_QC338_211019, 0861_QC442_211019	0861_QC516_211019,	**19-Oct-2021**	**04-Nov-2021**	17-Apr-2022	✓	**04-Nov-2021**	17-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC443_211020,	0861_QC339_211020	**20-Oct-2021**	**04-Nov-2021**	18-Apr-2022	✓	**04-Nov-2021**	18-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC444_211021,	0861_QC340_211021	**21-Oct-2021**	**04-Nov-2021**	19-Apr-2022	✓	**04-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC445_211022, 0861_QC520_211022	0861_QC341_211022,	**22-Oct-2021**	**04-Nov-2021**	20-Apr-2022	✓	**04-Nov-2021**	20-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC342_211025,	0861_QC446_211025	**25-Oct-2021**	**04-Nov-2021**	23-Apr-2022	✓	**04-Nov-2021**	23-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC447_211026,	0861_QC522_211026	**26-Oct-2021**	**04-Nov-2021**	24-Apr-2022	✓	**04-Nov-2021**	24-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC448_211027		**27-Oct-2021**	**04-Nov-2021**	25-Apr-2022	✓	**04-Nov-2021**	25-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC449_211028,	0861_QC344_211028	**28-Oct-2021**	**04-Nov-2021**	26-Apr-2022	✓	**04-Nov-2021**	26-Apr-2022	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X) 0861_QC338_211019, 0861_QC442_211019	0861_QC516_211019,	**19-Oct-2021**	**04-Nov-2021**	17-Apr-2022	✓	**04-Nov-2021**	17-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC443_211020,	0861_QC339_211020	**20-Oct-2021**	**04-Nov-2021**	18-Apr-2022	✓	**04-Nov-2021**	18-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC444_211021,	0861_QC340_211021	**21-Oct-2021**	**04-Nov-2021**	19-Apr-2022	✓	**04-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC445_211022, 0861_QC520_211022	0861_QC341_211022,	**22-Oct-2021**	**04-Nov-2021**	20-Apr-2022	✓	**04-Nov-2021**	20-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC342_211025,	0861_QC446_211025	**25-Oct-2021**	**04-Nov-2021**	23-Apr-2022	✓	**04-Nov-2021**	23-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC447_211026,	0861_QC522_211026	**26-Oct-2021**	**04-Nov-2021**	24-Apr-2022	✓	**04-Nov-2021**	24-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC448_211027		**27-Oct-2021**	**04-Nov-2021**	25-Apr-2022	✓	**04-Nov-2021**	25-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC449_211028,	0861_QC344_211028	**28-Oct-2021**	**04-Nov-2021**	26-Apr-2022	✓	**04-Nov-2021**	26-Apr-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X) 0861_QC338_211019, 0861_QC442_211019	0861_QC516_211019,	**19-Oct-2021**	**04-Nov-2021**	17-Apr-2022	✓	**04-Nov-2021**	17-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC443_211020,	0861_QC339_211020	**20-Oct-2021**	**04-Nov-2021**	18-Apr-2022	✓	**04-Nov-2021**	18-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC444_211021,	0861_QC340_211021	**21-Oct-2021**	**04-Nov-2021**	19-Apr-2022	✓	**04-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC445_211022, 0861_QC520_211022	0861_QC341_211022,	**22-Oct-2021**	**04-Nov-2021**	20-Apr-2022	✓	**04-Nov-2021**	20-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC342_211025,	0861_QC446_211025	**25-Oct-2021**	**04-Nov-2021**	23-Apr-2022	✓	**04-Nov-2021**	23-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC447_211026,	0861_QC522_211026	**26-Oct-2021**	**04-Nov-2021**	24-Apr-2022	✓	**04-Nov-2021**	24-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC448_211027		**27-Oct-2021**	**04-Nov-2021**	25-Apr-2022	✓	**04-Nov-2021**	25-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC449_211028,	0861_QC344_211028	**28-Oct-2021**	**04-Nov-2021**	26-Apr-2022	✓	**04-Nov-2021**	26-Apr-2022	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X) 0861_QC338_211019, 0861_QC442_211019	0861_QC516_211019,	**19-Oct-2021**	**04-Nov-2021**	17-Apr-2022	✓	**04-Nov-2021**	17-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC443_211020,	0861_QC339_211020	**20-Oct-2021**	**04-Nov-2021**	18-Apr-2022	✓	**04-Nov-2021**	18-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC444_211021,	0861_QC340_211021	**21-Oct-2021**	**04-Nov-2021**	19-Apr-2022	✓	**04-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC445_211022, 0861_QC520_211022	0861_QC341_211022,	**22-Oct-2021**	**04-Nov-2021**	20-Apr-2022	✓	**04-Nov-2021**	20-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC342_211025,	0861_QC446_211025	**25-Oct-2021**	**04-Nov-2021**	23-Apr-2022	✓	**04-Nov-2021**	23-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC447_211026,	0861_QC522_211026	**26-Oct-2021**	**04-Nov-2021**	24-Apr-2022	✓	**04-Nov-2021**	24-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC448_211027		**27-Oct-2021**	**04-Nov-2021**	25-Apr-2022	✓	**04-Nov-2021**	25-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC449_211028,	0861_QC344_211028	**28-Oct-2021**	**04-Nov-2021**	26-Apr-2022	✓	**04-Nov-2021**	26-Apr-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	19	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	19	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2130835**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Page	: 1 of 5
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 28-Oct-2021 12:50	Issue Date	: 01-Nov-2021
Client Requested Due Date	: 05-Nov-2021	Scheduled Reporting Date	: **09-Nov-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 5.0°C, 9.8°C, 6.2°C - Ice present
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 85 / 85

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **SPLIT WORK ORDER: It should be noted that ALS has split this work order over the following work orders EB2130835 / EB213850 due to the size of the sample numbers. For any further information regarding this processing of samples please contact ALS client services division on** [redacted]
- Please note that a sample container for ALS #4 was received empty.
- **The laboratory acknowledges your requested reporting date of 5 days, however due to the analytical request and associated procedures involved the requested due date will not be possible. Please note the best practical due date has been assigned.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2130835-001	19-Oct-2021 00:00	0861_SD016_211019	✓	✓
EB2130835-003	19-Oct-2021 00:00	0861_SD004_211019	✓	✓
EB2130835-005	19-Oct-2021 00:00	0861_SD005_211019	✓	✓
EB2130835-008	19-Oct-2021 00:00	0861_SD015_211019	✓	✓
EB2130835-010	19-Oct-2021 00:00	0861_SD020_211019	✓	✓
EB2130835-012	19-Oct-2021 00:00	0861_SD018_211019	✓	✓
EB2130835-014	19-Oct-2021 00:00	0861_SD034_211019	✓	✓
EB2130835-016	19-Oct-2021 00:00	0861_SD028_211019	✓	✓
EB2130835-017	19-Oct-2021 00:00	0861_QC154_211019	✓	✓
EB2130835-020	19-Oct-2021 00:00	0861_SD051_211019	✓	✓
EB2130835-022	19-Oct-2021 00:00	0861_SD050_211019	✓	✓
EB2130835-024	20-Oct-2021 00:00	0861_QC156_211020	✓	✓
EB2130835-026	20-Oct-2021 00:00	0861_SD036_211020	✓	✓
EB2130835-027	20-Oct-2021 00:00	0861_SD099_211020	✓	✓
EB2130835-029	20-Oct-2021 00:00	0861_SD100_211020	✓	✓
EB2130835-031	20-Oct-2021 00:00	0861_SD047_211020	✓	✓
EB2130835-034	20-Oct-2021 00:00	0861_SD088_211020	✓	✓
EB2130835-035	20-Oct-2021 00:00	0861_SD052_211020	✓	✓
EB2130835-037	20-Oct-2021 00:00	0861_SD089_211020	✓	✓
EB2130835-039	20-Oct-2021 00:00	0861_SD049_211020	✓	✓
EB2130835-043	21-Oct-2021 00:00	0861_SD021_211021	✓	✓
EB2130835-044	21-Oct-2021 00:00	0861_QC158_211021	✓	✓
EB2130835-049	21-Oct-2021 00:00	0861_SD091_211021	✓	✓
EB2130835-063	22-Oct-2021 00:00	0861_QC160_211022	✓	✓
EB2130835-066	22-Oct-2021 00:00	0861_SD003_211022	✓	✓
EB2130835-068	22-Oct-2021 00:00	0861_SD094_211022	✓	✓
EB2130835-070	22-Oct-2021 00:00	0861_SD009_211022	✓	✓
EB2130835-072	25-Oct-2021 00:00	0861_SD064_211025	✓	✓
EB2130835-073	25-Oct-2021 00:00	0861_SD067_211025	✓	✓
EB2130835-075	25-Oct-2021 00:00	0861_SD079_211025	✓	✓
EB2130835-077	25-Oct-2021 00:00	0861_SD080_211025	✓	✓
EB2130835-079	25-Oct-2021 00:00	0861_SD053_211025	✓	✓
EB2130835-081	25-Oct-2021 00:00	0861_SD038_211025	✓	✓
EB2130835-084	25-Oct-2021 00:00	0861_SD002_211025	✓	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2130835-002	19-Oct-2021 00:00	0861_SW016_211019	✓
EB2130835-004	19-Oct-2021 00:00	0861_SW004_211019	✓
EB2130835-006	19-Oct-2021 00:00	0861_SW005_211019	✓
EB2130835-007	19-Oct-2021 00:00	0861_SW015_211019	✓
EB2130835-009	19-Oct-2021 00:00	0861_SW020_211019	✓
EB2130835-011	19-Oct-2021 00:00	0861_SW018_211019	✓
EB2130835-013	19-Oct-2021 00:00	0861_SW034_211019	✓
EB2130835-015	19-Oct-2021 00:00	0861_SW028_211019	✓
EB2130835-018	19-Oct-2021 00:00	0861_QC153_211019	✓
EB2130835-019	19-Oct-2021 00:00	0861_SW051_211019	✓
EB2130835-021	19-Oct-2021 00:00	0861_SW050_211019	✓
EB2130835-023	20-Oct-2021 00:00	0861_QC155_211020	✓
EB2130835-025	20-Oct-2021 00:00	0861_SW036_211020	✓
EB2130835-028	20-Oct-2021 00:00	0861_SW099_211020	✓
EB2130835-030	20-Oct-2021 00:00	0861_SW100_211020	✓
EB2130835-032	20-Oct-2021 00:00	0861_SW047_211020	✓
EB2130835-033	20-Oct-2021 00:00	0861_SW088_211020	✓
EB2130835-036	20-Oct-2021 00:00	0861_SW052_211020	✓
EB2130835-038	20-Oct-2021 00:00	0861_SW089_211020	✓
EB2130835-040	20-Oct-2021 00:00	0861_SW049_211020	✓
EB2130835-041	21-Oct-2021 00:00	0861_MW002_211021	✓
EB2130835-042	21-Oct-2021 00:00	0861_QC157_211021	✓
EB2130835-045	21-Oct-2021 00:00	0861_SW021_211021	✓
EB2130835-046	21-Oct-2021 00:00	0861_MW030_211021	✓
EB2130835-047	21-Oct-2021 00:00	0861_MW031_211021	✓
EB2130835-048	21-Oct-2021 00:00	0861_MW034_211021	✓
EB2130835-050	21-Oct-2021 00:00	0861_SW091_211021	✓
EB2130835-051	21-Oct-2021 00:00	0861_MW036_211021	✓
EB2130835-052	21-Oct-2021 00:00	0861_MW028_211021	✓
EB2130835-053	21-Oct-2021 00:00	0861_MW029_211021	✓
EB2130835-054	21-Oct-2021 00:00	0861_MW044_211021	✓
EB2130835-055	21-Oct-2021 00:00	0861_MW024_211021	✓
EB2130835-056	21-Oct-2021 00:00	0861_MW055D_211021	✓
EB2130835-057	21-Oct-2021 00:00	0861_MW055S_211021	✓
EB2130835-058	21-Oct-2021 00:00	0861_MW035_211021	✓
EB2130835-059	21-Oct-2021 00:00	0861_MW022_211021	✓
EB2130835-060	21-Oct-2021 00:00	0861_MW049_211021	✓
EB2130835-061	21-Oct-2021 00:00	0861_MW048_211021	✓
EB2130835-062	22-Oct-2021 00:00	0861_QC159_211022	✓
EB2130835-064	22-Oct-2021 00:00	0861_MW041_211022	✓
EB2130835-065	22-Oct-2021 00:00	0861_SW003_211022	✓

			WATER - EP231X PFAS - Full Suite (28 analytes)
EB2130835-067	22-Oct-2021 00:00	0861_SW094_211022	✓
EB2130835-069	22-Oct-2021 00:00	0861_SW009_211022	✓
EB2130835-071	25-Oct-2021 00:00	0861_SW064_211025	✓
EB2130835-074	25-Oct-2021 00:00	0861_SW067_211025	✓
EB2130835-076	25-Oct-2021 00:00	0861_SW079_211025	✓
EB2130835-078	25-Oct-2021 00:00	0861_SW080_211025	✓
EB2130835-080	25-Oct-2021 00:00	0861_SW053_211025	✓
EB2130835-082	25-Oct-2021 00:00	0861_SW038_211025	✓
EB2130835-083	25-Oct-2021 00:00	0861_QC161_211025	✓
EB2130835-085	25-Oct-2021 00:00	0861_SW002_211025	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2130835**	Page	: 1 of 45
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 28-Oct-2021 12:50
Order number	: 60612563 3.1	Date Analysis Commenced	: 01-Nov-2021
C-O-C number	: ----	Issue Date	: 09-Nov-2021 13:59
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 85		
No. of samples analysed	: 85		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
	Senior Organic Chemist - PFAS	Brisbane Inorganics, Stafford, QLD
	Senior Organic Chemist - PFAS	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- **SPLIT WORK ORDER: It should be noted that ALS has split this work order over the following work orders EB2130835 / EB213850 due to the size of the sample numbers. For any further information regarding this processing of samples please contact ALS client services division on** [redacted]
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X PFAS: Particular samples required dilution due to sample matrix. LOR values have been adjusted accordingly and surrogate recoveries not determined.
- EP231X PFAS: Particular samples required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- EP231X PFAS: The LOR of particular analytes have been raised due to sample matrix interferences.
- EP231X-LL PFAS Low level: Matrix spike recovery not determined due to dilution of primary sample.
- EP231X-INJ PFAS by LCMSMS: Particular samples have been tested to the legacy QSM 5.1 aligned, NATA accredited method due to sample matrix being unsuitable for SPE extraction (high sediment content).
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.
- EP231X-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where only a single sample container is received.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD016_211019	0861_SD004_211019	0861_SD005_211019	0861_SD015_211019	0861_SD020_211019
				Sampling date / time	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-001	EB2130835-003	EB2130835-005	EB2130835-008	EB2130835-010
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**43.4**	**39.9**	**43.3**	**44.8**	**41.8**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0005	<0.0002	<0.0006	<0.0012	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0012	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0024**	**0.0006**	**0.0012**	<0.0018	**0.0004**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0012	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0104**	**0.0045**	**0.0092**	<0.0154	**0.0038**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0005	**0.0005**	<0.0008	<0.0012	**0.0007**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.002	<0.001	<0.002	<0.006	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0005	**0.0004**	<0.0005	<0.0012	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0008**	**0.0006**	<0.0010	<0.0012	**0.0003**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0012	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0005	**0.0003**	<0.0005	<0.0012	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0012	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0012	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0012	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0012	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0012	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0012	<0.0005	<0.0012	<0.0031	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0012	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0012	<0.0005	<0.0012	<0.0031	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD016_211019	0861_SD004_211019	0861_SD005_211019	0861_SD015_211019	0861_SD020_211019
				Sampling date / time	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-001	EB2130835-003	EB2130835-005	EB2130835-008	EB2130835-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0012	<0.0005	<0.0012	<0.0031	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0012	<0.0005	<0.0012	<0.0031	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0012	<0.0005	<0.0012	<0.0031	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0012	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0005	<0.0002	<0.0005	<0.0012	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0012	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0012	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0012	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0012	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0136**	**0.0069**	**0.0104**	<0.0012	**0.0052**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0128**	**0.0051**	**0.0104**	<0.0012	**0.0042**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0136**	**0.0064**	**0.0104**	<0.0012	**0.0045**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**115**	**106**	**120**	**Not Determined**	**98.0**
13C8-PFOA	----	0.0002	%		**100**	**93.0**	**85.0**	**Not Determined**	**92.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD018_211019	0861_SD034_211019	0861_SD028_211019	0861_QC154_211019	0861_SD051_211019
				Sampling date / time	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-012	EB2130835-014	EB2130835-016	EB2130835-017	EB2130835-020
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**51.4**	**35.6**	**38.5**	**34.9**	**41.6**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0010	<0.0005	<0.0002	<0.0002	<0.0005
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0010	<0.0005	<0.0002	<0.0002	<0.0005
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0010	<0.0008	**0.0011**	**0.0006**	**0.0009**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0010	<0.0005	<0.0002	<0.0002	<0.0005
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0064**	**0.0054**	**0.0090**	**0.0054**	**0.0078**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0010	<0.0008	<0.0002	<0.0002	<0.0005
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.005	<0.002	<0.001	<0.001	<0.002
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0010	<0.0005	**0.0005**	<0.0002	**0.0011**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0010	<0.0005	<0.0002	<0.0002	**0.0010**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0010	<0.0005	<0.0002	<0.0002	<0.0008
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0010	<0.0005	<0.0002	<0.0002	<0.0005
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0010	<0.0005	<0.0002	<0.0002	<0.0005
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0010	<0.0006	<0.0002	<0.0002	<0.0005
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0010	<0.0005	<0.0002	<0.0002	<0.0005
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0010	<0.0005	<0.0002	<0.0002	<0.0005
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0010	<0.0005	<0.0002	<0.0002	<0.0005
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0025	<0.0012	<0.0005	<0.0005	<0.0012
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0010	<0.0005	<0.0002	<0.0002	<0.0005
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0025	<0.0012	<0.0005	<0.0005	<0.0012

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD018_211019	0861_SD034_211019	0861_SD028_211019	0861_QC154_211019	0861_SD051_211019
				Sampling date / time	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-012	EB2130835-014	EB2130835-016	EB2130835-017	EB2130835-020
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0025	<0.0012	<0.0005	<0.0005	<0.0012
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0025	<0.0012	<0.0005	<0.0005	<0.0012
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0025	<0.0012	<0.0005	<0.0005	<0.0012
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0010	<0.0005	<0.0002	<0.0002	<0.0005
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0010	<0.0005	<0.0002	<0.0002	<0.0005
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0010	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0010	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0010	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0010	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0064**	**0.0054**	**0.0106**	**0.0060**	**0.0108**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0064**	**0.0054**	**0.0101**	**0.0060**	**0.0087**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0064**	**0.0054**	**0.0106**	**0.0060**	**0.0108**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**120**	**110**	**104**	**104**	**115**
13C8-PFOA	----	0.0002	%		**90.0**	**95.0**	**94.0**	**107**	**100**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_SD050_211019	0861_QC156_211020	0861_SD036_211020	0861_SD099_211020	0861_SD100_211020
			Sampling date / time	19-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00
Compound	CAS Number	LOR	Unit	EB2130835-022	EB2130835-024	EB2130835-026	EB2130835-027	EB2130835-029
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**37.0**	**42.7**	**40.7**	**42.4**	**37.2**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0004**	<0.0005	<0.0006	<0.0012	<0.0005
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0030**	**0.0043**	<0.0044	**0.0083**	**0.0028**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0064	<0.0016	<0.0006	<0.0005	<0.0005
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.002	<0.002	<0.002	<0.002
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	**0.0003**	<0.0005	<0.0006	<0.0005	<0.0005
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	**0.0003**	<0.0006	<0.0006	<0.0005	<0.0005
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0006	<0.0008	<0.0005	<0.0005
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0005	<0.0009	<0.0005	<0.0005
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0018	<0.0012	<0.0005	<0.0005
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	**0.0006**	<0.0005	<0.0005	<0.0005	<0.0005
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD050_211019	0861_QC156_211020	0861_SD036_211020	0861_SD099_211020	0861_SD100_211020
				Sampling date / time	19-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-022	EB2130835-024	EB2130835-026	EB2130835-027	EB2130835-029
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0012	<0.0012	<0.0012	<0.0012
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0012	<0.0012	<0.0012	<0.0012
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0012	<0.0012	<0.0012	<0.0012
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0005	<0.0005	<0.0005	<0.0005
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0045	<0.0015	<0.0015	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0046**	**0.0043**	<0.0005	**0.0083**	**0.0028**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0034**	**0.0043**	<0.0005	**0.0083**	**0.0028**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0040**	**0.0043**	<0.0005	**0.0083**	**0.0028**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**88.5**	**Not Determined**	**Not Determined**	**130**	**125**
13C8-PFOA	----	0.0002	%		**93.0**	**Not Determined**	**Not Determined**	**85.0**	**85.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD047_211020	0861_SD088_211020	0861_SD052_211020	0861_SD089_211020	0861_SD049_211020
				Sampling date / time	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-031	EB2130835-034	EB2130835-035	EB2130835-037	EB2130835-039
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**40.4**	**36.8**	**48.5**	**50.4**	**46.3**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0005	<0.0002	<0.0012	<0.0010	<0.0012
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0005	<0.0002	<0.0012	<0.0010	<0.0012
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0005	<0.0002	<0.0012	<0.0010	**0.0085**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0005	<0.0002	<0.0012	<0.0010	<0.0012
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0016	**0.0003**	<0.0012	<0.0018	**0.122**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0005	<0.0003	<0.0012	<0.0010	<0.0012
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.002	<0.001	<0.006	<0.005	<0.006
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0005	<0.0002	<0.0012	<0.0010	<0.0012
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0005	<0.0002	<0.0012	<0.0010	<0.0012
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0005	<0.0002	<0.0012	<0.0010	<0.0012
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0005	<0.0002	<0.0012	<0.0010	<0.0012
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0005	<0.0002	<0.0012	<0.0010	<0.0012
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0005	<0.0002	<0.0012	<0.0010	<0.0012
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0005	<0.0002	<0.0012	<0.0010	<0.0012
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0005	<0.0002	<0.0012	<0.0010	<0.0012
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0005	<0.0002	<0.0012	<0.0010	<0.0012
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0012	<0.0005	<0.0031	<0.0024	<0.0031
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0005	<0.0002	<0.0012	<0.0010	<0.0012
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0012	<0.0005	<0.0031	<0.0024	<0.0031

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD047_211020	0861_SD088_211020	0861_SD052_211020	0861_SD089_211020	0861_SD049_211020
				Sampling date / time	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-031	EB2130835-034	EB2130835-035	EB2130835-037	EB2130835-039
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0012	<0.0005	<0.0031	<0.0024	<0.0031
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0012	<0.0005	<0.0031	<0.0024	<0.0031
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0012	<0.0005	<0.0031	<0.0024	<0.0031
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0005	<0.0002	<0.0012	<0.0010	<0.0012
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0005	<0.0002	<0.0012	<0.0010	<0.0012
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0010	<0.0012
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0010	<0.0012
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0010	<0.0012
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0010	<0.0012
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0005	**0.0003**	<0.0012	<0.0010	**0.130**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0005	**0.0003**	<0.0012	<0.0010	**0.130**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0005	**0.0003**	<0.0012	<0.0010	**0.130**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**130**	**106**	**100**	**100**	**Not Determined**
13C8-PFOA	----	0.0002	%		**90.0**	**92.0**	**87.5**	**90.0**	**Not Determined**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD021_211021	0861_QC158_211021	0861_SD091_211021	0861_QC160_211022	0861_SD003_211022
				Sampling date / time	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-043	EB2130835-044	EB2130835-049	EB2130835-063	EB2130835-066
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**25.2**	**26.7**	**39.2**	**35.1**	**38.0**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		**0.0003**	**0.0004**	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		**0.0002**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0018**	**0.0029**	<0.0002	<0.0002	**0.0013**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		**0.0002**	**0.0002**	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0284**	**0.0384**	<0.0016	**0.0014**	**0.0284**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		**0.0032**	**0.0041**	<0.0004	<0.0002	**0.0016**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		**0.0004**	**0.0007**	<0.0002	**0.0003**	**0.0010**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0009**	**0.0014**	<0.0002	**0.0002**	**0.0010**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		**0.0002**	**0.0004**	<0.0004	<0.0002	**0.0005**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		**0.0005**	**0.0007**	<0.0002	<0.0002	**0.0005**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	**0.0002**	<0.0002	<0.0002	**0.0006**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	**0.0009**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		**0.0005**	**0.0006**	<0.0012	<0.0002	**0.0008**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		**0.0004**	**0.0004**	<0.0002	<0.0002	**0.0005**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		**0.0004**	**0.0005**	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0006	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		**0.0008**	**0.0012**	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0006	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD021_211021	0861_QC158_211021	0861_SD091_211021	0861_QC160_211022	0861_SD003_211022
				Sampling date / time	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-043	EB2130835-044	EB2130835-049	EB2130835-063	EB2130835-066
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0006	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0006	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0006	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0382**	**0.0521**	<0.0002	**0.0019**	**0.0371**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0302**	**0.0413**	<0.0002	**0.0014**	**0.0297**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0325**	**0.0449**	<0.0002	**0.0019**	**0.0327**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**105**	**109**	**128**	**128**	**81.0**
13C8-PFOA	----	0.0002	%		**98.0**	**106**	**80.0**	**90.5**	**82.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD094_211022	0861_SD009_211022	0861_SD064_211025	0861_SD067_211025	0861_SD079_211025
				Sampling date / time	22-Oct-2021 00:00	22-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-068	EB2130835-070	EB2130835-072	EB2130835-073	EB2130835-075
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**33.6**	**41.0**	**51.1**	**51.3**	**28.9**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	**0.0007**	**0.0068**	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	**0.0008**	**0.0095**	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	**0.0004**	**0.0090**	**0.0926**	**0.0013**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	**0.0009**	**0.0085**	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0036**	**0.0096**	**0.0945**	**0.780**	**0.0162**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0140	**0.0017**	**0.0183**	**0.0004**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.003	**0.008**	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		**0.0004**	<0.0002	**0.0010**	**0.0099**	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	**0.0003**	**0.0026**	**0.0314**	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	**0.0004**	**0.0045**	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	**0.0004**	**0.0011**	**0.0116**	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	**0.0003**	**0.0086**	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0078**	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0056**	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0078**	**0.0003**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0020**	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0006	<0.0006	<0.0005	<0.0024	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0045**	**0.0002**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0006	<0.0006	<0.0005	<0.0024	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD094_211022	0861_SD009_211022	0861_SD064_211025	0861_SD067_211025	0861_SD079_211025
				Sampling date / time	22-Oct-2021 00:00	22-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-068	EB2130835-070	EB2130835-072	EB2130835-073	EB2130835-075
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0006	<0.0006	<0.0005	<0.0024	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0006	<0.0006	<0.0005	<0.0024	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0006	<0.0006	<0.0005	<0.0024	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0010	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0010	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0010	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0010	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0010	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0010	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0040**	**0.0107**	**0.113**	**1.02**	**0.0184**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0036**	**0.0100**	**0.104**	**0.873**	**0.0175**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0040**	**0.0107**	**0.109**	**0.945**	**0.0175**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**125**	**97.5**	**88.0**	**130**	**111**
13C8-PFOA	----	0.0002	%		**97.5**	**90.0**	**96.5**	**95.0**	**96.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_SD080_211025	0861_SD053_211025	0861_SD038_211025	0861_SD002_211025	----
			Sampling date / time	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00	----
Compound	CAS Number	LOR	Unit	EB2130835-077	EB2130835-079	EB2130835-081	EB2130835-084	--------
				Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**64.7**	**29.3**	**7.6**	**48.0**	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	**0.0036**	<0.0002	<0.0002	<0.0002	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	**0.0060**	<0.0002	<0.0002	<0.0002	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0954**	**0.0007**	<0.0002	**0.0027**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	**0.0140**	<0.0002	<0.0002	<0.0002	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.903**	**0.0350**	<0.0002	**0.0407**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	**0.0240**	<0.0002	<0.0002	**0.0018**	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.005	<0.001	<0.001	<0.001	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	**0.0021**	<0.0002	<0.0002	**0.0024**	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	**0.0073**	<0.0002	<0.0002	**0.0021**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	**0.0024**	<0.0002	<0.0002	**0.0018**	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	**0.0076**	<0.0002	<0.0002	**0.0009**	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	**0.0048**	<0.0002	<0.0002	**0.0012**	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	**0.0079**	<0.0002	<0.0002	**0.0016**	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	**0.0270**	<0.0002	<0.0002	**0.0022**	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	**0.0248**	<0.0002	<0.0002	**0.0023**	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	**0.0091**	<0.0002	<0.0002	**0.0006**	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	**0.0052**	<0.0006	<0.0005	<0.0006	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	**0.0128**	<0.0002	<0.0002	<0.0002	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0025	<0.0006	<0.0005	<0.0006	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD080_211025	0861_SD053_211025	0861_SD038_211025	0861_SD002_211025	----
				Sampling date / time	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00	----
Compound	CAS Number	LOR	Unit		EB2130835-077	EB2130835-079	EB2130835-081	EB2130835-084	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0025	<0.0006	<0.0005	<0.0006	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0025	<0.0006	<0.0005	<0.0006	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0025	<0.0006	<0.0005	<0.0006	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0010	<0.0002	<0.0002	<0.0002	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		**0.0013**	<0.0002	<0.0002	<0.0002	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0010	<0.0005	<0.0005	<0.0005	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		**0.0011**	<0.0005	<0.0005	**0.0006**	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		**0.0048**	<0.0005	<0.0005	<0.0005	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		**0.0038**	<0.0005	<0.0005	<0.0005	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**1.17**	**0.0357**	<0.0002	**0.0609**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.998**	**0.0357**	<0.0002	**0.0434**	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**1.03**	**0.0357**	<0.0002	**0.0512**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**120**	**97.5**	**117**	**100**	----
13C8-PFOA	----	0.0002	%		**85.0**	**80.0**	**104**	**92.5**	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW016_211019	0861_SW004_211019	0861_SW005_211019	0861_SW015_211019	0861_SW020_211019
				Sampling date / time	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00
					EB2130835-002	EB2130835-004	EB2130835-006	EB2130835-007	EB2130835-009
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	**0.01**	**0.01**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	**0.01**	<0.01	**0.04**	**0.04**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW016_211019	0861_SW004_211019	0861_SW005_211019	0861_SW015_211019	0861_SW020_211019
				Sampling date / time	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00
					EB2130835-002	EB2130835-004	EB2130835-006	EB2130835-007	EB2130835-009
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.02**	**0.01**	<0.01	**0.05**	**0.05**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.02**	**0.01**	<0.01	**0.05**	**0.05**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.02**	**0.01**	<0.01	**0.05**	**0.05**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**102**	**96.6**	**91.4**	**90.7**	**88.7**
13C8-PFOA	----	0.02	%		**101**	**100**	**98.7**	**98.1**	**97.9**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW018_211019	0861_SW034_211019	0861_SW028_211019	0861_QC153_211019	0861_SW051_211019
				Sampling date / time	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00
					EB2130835-011	EB2130835-013	EB2130835-015	EB2130835-018	EB2130835-019
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.06**	**0.05**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**0.02**	**0.02**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.01**	<0.01	**0.27**	**0.25**	**0.06**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.03**	**0.02**	**0.71**	**0.57**	**0.08**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**0.02**	**0.02**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**0.04**	**0.04**	**0.03**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.01**	**0.01**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW018_211019	0861_SW034_211019	0861_SW028_211019	0861_QC153_211019	0861_SW051_211019
				Sampling date / time	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00	19-Oct-2021 00:00
					EB2130835-011	EB2130835-013	EB2130835-015	EB2130835-018	EB2130835-019
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.04**	**0.02**	**1.13**	**0.96**	**0.17**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.04**	**0.02**	**0.98**	**0.82**	**0.14**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.04**	**0.02**	**1.11**	**0.94**	**0.17**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**85.2**	**74.5**	**94.6**	**94.4**	**100**
13C8-PFOA	----	0.02	%		**94.9**	**98.7**	**99.5**	**97.5**	**101**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW050_211019	0861_QC155_211020	0861_SW036_211020	0861_SW099_211020	0861_SW100_211020
				Sampling date / time	19-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-021	EB2130835-023	EB2130835-025	EB2130835-028	EB2130835-030
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	**0.01**	**0.02**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.01**	**0.03**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW050_211019	0861_QC155_211020	0861_SW036_211020	0861_SW099_211020	0861_SW100_211020
				Sampling date / time	19-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-021	EB2130835-023	EB2130835-025	EB2130835-028	EB2130835-030
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	**0.02**	**0.05**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.02**	**0.05**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	**0.02**	**0.05**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**104**	**88.7**	**98.5**	**86.5**	**102**
13C8-PFOA	----	0.02	%		**98.1**	**99.5**	**96.5**	**96.9**	**94.6**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW047_211020	0861_SW088_211020	0861_SW052_211020	0861_SW089_211020	0861_SW049_211020
				Sampling date / time	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-032	EB2130835-033	EB2130835-036	EB2130835-038	EB2130835-040
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.35**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.23**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**2.07**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.11**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**2.40**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	**0.4**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.32**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.90**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.13**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.30**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW047_211020	0861_SW088_211020	0861_SW052_211020	0861_SW089_211020	0861_SW049_211020
				Sampling date / time	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00	20-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-032	EB2130835-033	EB2130835-036	EB2130835-038	EB2130835-040
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**7.21**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**4.47**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**6.87**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.9**	**93.5**	**117**	**94.0**	**104**
13C8-PFOA	----	0.02	%		**94.5**	**96.5**	**101**	**98.1**	**97.1**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW002_211021	0861_QC157_211021	0861_SW021_211021	0861_MW030_211021	0861_MW031_211021
				Sampling date / time	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00
					EB2130835-041	EB2130835-042	EB2130835-045	EB2130835-046	EB2130835-047
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**1.01**	**1.79**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**0.74**	**1.27**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	**5.20**	**3.38**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**0.26**	**0.03**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	**9.50**	**0.03**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	**0.31**	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	**0.7**	**0.5**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**1.40**	**0.78**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**2.77**	**4.28**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	**0.41**	**0.52**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.80**	**0.31**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	**0.05**	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.05

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW002_211021	0861_QC157_211021	0861_SW021_211021	0861_MW030_211021	0861_MW031_211021
				Sampling date / time	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00
					EB2130835-041	EB2130835-042	EB2130835-045	EB2130835-046	EB2130835-047
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	**23.2**	**12.9**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	**14.7**	**3.41**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	**21.8**	**11.6**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**112**	**96.7**	**96.7**	**96.3**	**95.0**
13C8-PFOA	----	0.02	%		**103**	**105**	**101**	**96.7**	**97.1**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW034_211021	0861_SW091_211021	0861_MW036_211021	0861_MW028_211021	0861_MW029_211021
				Sampling date / time	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00
					EB2130835-048	EB2130835-050	EB2130835-051	EB2130835-052	EB2130835-053
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	**4.00**	**0.76**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	**3.65**	**0.75**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	**0.03**	**28.1**	**5.39**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	**2.82**	**0.38**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	**32.0**	**4.53**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	**0.7**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	**1.01**	**0.18**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	**5.48**	**0.98**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	**0.90**	**0.14**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	**1.86**	**0.27**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.06
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.06
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.06

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW034_211021	0861_SW091_211021	0861_MW036_211021	0861_MW028_211021	0861_MW029_211021
				Sampling date / time	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00
					EB2130835-048	EB2130835-050	EB2130835-051	EB2130835-052	EB2130835-053
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.06
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.12	<0.06
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	**0.03**	**80.5**	**13.4**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	**0.03**	**60.1**	**9.92**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	**0.03**	**74.0**	**12.2**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	**89.8**	**101**	**109**	**104**
13C8-PFOA	----	0.02	%		**97.0**	**97.7**	**101**	**96.4**	**97.7**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW044_211021	0861_MW024_211021	0861_MW055D_211021	0861_MW055S_211021	0861_MW035_211021
				Sampling date / time	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00
					EB2130835-054	EB2130835-055	EB2130835-056	EB2130835-057	EB2130835-058
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	**0.05**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.05**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	**0.30**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.18**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.05**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.02**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW044_211021	0861_MW024_211021	0861_MW055D_211021	0861_MW055S_211021	0861_MW035_211021
				Sampling date / time	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-054	EB2130835-055	EB2130835-056	EB2130835-057	EB2130835-058
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	**0.05**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	**0.05**	**0.65**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.48**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	**0.05**	**0.60**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.3**	**91.6**	**108**	**101**	**109**
13C8-PFOA	----	0.02	%		**98.0**	**98.2**	**95.5**	**102**	**103**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW022_211021	0861_MW049_211021	0861_MW048_211021	0861_QC159_211022	0861_MW041_211022
				Sampling date / time	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00
					EB2130835-059	EB2130835-060	EB2130835-061	EB2130835-062	EB2130835-064
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	----	**0.12**	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	----	**0.09**	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		----	----	**0.74**	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	----	**0.03**	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	----	**1.60**	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	----	<0.02	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.42**	**1.93**	----	<0.02	**0.08**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.27**	**1.81**	----	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**7.72**	**10.5**	----	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.15**	**0.51**	----	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.29**	**15.4**	----	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		----	----	<0.10	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	----	**0.04**	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	----	**0.16**	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	----	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	----	**0.04**	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	----	<0.02	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	----	<0.02	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	----	<0.02	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	----	<0.02	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW022_211021	0861_MW049_211021	0861_MW048_211021	0861_QC159_211022	0861_MW041_211022
				Sampling date / time	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00
					EB2130835-059	EB2130835-060	EB2130835-061	EB2130835-062	EB2130835-064
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	----	<0.02	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	----	<0.05	----	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.7**	**0.8**	----	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.29**	**0.90**	----	<0.02	**0.07**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.44**	**3.49**	----	<0.02	**0.04**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.27**	**0.41**	----	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.40**	**1.07**	----	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.06	<0.05	----	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	----	<0.02	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	----	<0.05	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	----	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	----	<0.05	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	----	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	----	<0.02	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	----	<0.02	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW022_211021	0861_MW049_211021	0861_MW048_211021	0861_QC159_211022	0861_MW041_211022
				Sampling date / time	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-059	EB2130835-060	EB2130835-061	EB2130835-062	EB2130835-064
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.06	<0.05	----	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.06	<0.05	----	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.06	<0.05	----	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.06	<0.05	----	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	----	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		----	----	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		----	----	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		----	----	<0.05	----	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		----	----	**2.82**	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW022_211021	0861_MW049_211021	0861_MW048_211021	0861_QC159_211022	0861_MW041_211022
				Sampling date / time	21-Oct-2021 00:00	21-Oct-2021 00:00	21-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-059	EB2130835-060	EB2130835-061	EB2130835-062	EB2130835-064
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**----**	**----**	**2.34**	**----**	**----**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**----**	**----**	**2.70**	**----**	**----**
Sum of PFAS	----	0.01	µg/L		**15.0**	**36.8**	**----**	<0.01	**0.19**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**9.01**	**25.9**	**----**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**13.5**	**34.5**	**----**	<0.01	**0.19**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**113**	**111**	**----**	**119**	**107**
13C4-PFOS	----	0.02	%		**----**	**----**	**101**	**----**	**----**
13C8-PFOA	----	0.02	%		**97.9**	**109**	**----**	**100**	**102**
13C8-PFOA	----	0.02	%		**----**	**----**	**108**	**----**	**----**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW003_211022	0861_SW094_211022	0861_SW009_211022	0861_SW064_211025	0861_SW067_211025
				Sampling date / time	22-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00
					EB2130835-065	EB2130835-067	EB2130835-069	EB2130835-071	EB2130835-074
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	----	----	**0.29**	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	----	----	**0.13**	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		----	----	----	**0.79**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	----	----	**0.03**	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	----	----	**0.71**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	----	----	<0.02	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.10**	**0.02**	<0.02	----	**1.70**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.08**	<0.02	<0.02	----	**1.48**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.58**	**0.12**	<0.01	----	**10.1**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.03**	<0.02	<0.02	----	**0.31**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.85**	**0.21**	**0.02**	----	**9.39**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	----	<0.05
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		----	----	----	**0.11**	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	----	----	**0.10**	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	----	----	**0.26**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	----	----	**0.02**	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	----	----	**0.04**	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	----	----	<0.02	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	----	----	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	----	----	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	----	----	<0.02	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW003_211022	0861_SW094_211022	0861_SW009_211022	0861_SW064_211025	0861_SW067_211025
				Sampling date / time	22-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00
					EB2130835-065	EB2130835-067	EB2130835-069	EB2130835-071	EB2130835-074
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	----	----	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	----	----	<0.05	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	----	**3.0**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.16**	**0.03**	<0.02	----	**3.78**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.24**	**0.05**	<0.02	----	**4.67**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.04**	<0.02	<0.02	----	**0.48**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.06**	**0.01**	<0.01	----	**0.55**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	----	**0.14**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	----	<0.05
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	----	<0.05
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	----	<0.05
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	----	<0.05
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	----	<0.12
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	----	----	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	----	----	<0.05	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	----	----	<0.05	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	----	----	<0.05	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	----	----	<0.05	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	----	----	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	----	----	<0.02	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW003_211022	0861_SW094_211022	0861_SW009_211022	0861_SW064_211025	0861_SW067_211025
				Sampling date / time	22-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-065	EB2130835-067	EB2130835-069	EB2130835-071	EB2130835-074
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	----	<0.05
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	----	<0.12
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	----	<0.12
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	----	<0.12
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	----	<0.12
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	----	<0.05
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	----	<0.05
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	----	----	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		----	----	----	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		----	----	----	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		----	----	----	<0.05	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	----	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	----	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	----	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	----	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		----	----	----	**2.48**	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW003_211022	0861_SW094_211022	0861_SW009_211022	0861_SW064_211025	0861_SW067_211025
				Sampling date / time	22-Oct-2021 00:00	22-Oct-2021 00:00	22-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00
					EB2130835-065	EB2130835-067	EB2130835-069	EB2130835-071	EB2130835-074
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		----	----	----	**1.50**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		----	----	----	**2.32**	----
Sum of PFAS	----	0.01	µg/L		**2.14**	**0.44**	**0.02**	----	**35.6**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.43**	**0.33**	**0.02**	----	**19.5**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**2.03**	**0.44**	**0.02**	----	**33.7**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**114**	**104**	**105**	----	**107**
13C4-PFOS	----	0.02	%		----	----	----	**101**	----
13C8-PFOA	----	0.02	%		**105**	**97.9**	**97.4**	----	**98.2**
13C8-PFOA	----	0.02	%		----	----	----	**112**	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW079_211025	0861_SW080_211025	0861_SW053_211025	0861_SW038_211025	0861_QC161_211025
				Sampling date / time	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00
					EB2130835-076	EB2130835-078	EB2130835-080	EB2130835-082	EB2130835-083
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	**0.19**	----	----	**0.07**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	**0.17**	----	----	**0.04**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		----	**1.85**	----	----	**0.39**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	**0.11**	----	----	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	**3.12**	----	----	**0.64**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	<0.02	----	----	<0.02
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.06**	----	**0.06**	<0.02	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.05**	----	**0.06**	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.32**	----	**0.52**	<0.01	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	<0.02	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.41**	----	**0.49**	<0.01	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	<0.02	<0.02	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		----	<0.10	----	----	**0.15**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	**0.11**	----	----	**0.24**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	**0.41**	----	----	**0.24**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	**0.05**	----	----	**0.07**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	**0.09**	----	----	**0.06**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	<0.02	----	----	**0.03**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	<0.02	----	----	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	<0.02	----	----	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	<0.02	----	----	<0.02

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW079_211025	0861_SW080_211025	0861_SW053_211025	0861_SW038_211025	0861_QC161_211025
				Sampling date / time	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-076	EB2130835-078	EB2130835-080	EB2130835-082	EB2130835-083
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	<0.02	----	----	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	<0.05	----	----	<0.05
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.04**	----	**0.02**	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.15**	----	**0.11**	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.02	----	**0.01**	<0.01	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	<0.02	<0.02	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	<0.02	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	<0.02	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	<0.02	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	<0.02	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	<0.05	<0.05	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	<0.02	----	----	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	<0.05	----	----	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	<0.05	----	----	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	<0.05	----	----	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	<0.05	----	----	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	<0.02	----	----	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	<0.02	----	----	<0.02

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW079_211025	0861_SW080_211025	0861_SW053_211025	0861_SW038_211025	0861_QC161_211025
				Sampling date / time	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-076	EB2130835-078	EB2130835-080	EB2130835-082	EB2130835-083
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	<0.02	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	<0.02	<0.02	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	<0.05	----	----	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		----	<0.05	----	----	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		----	<0.05	----	----	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		----	<0.05	----	----	<0.05
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	<0.05	<0.05	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		----	**6.10**	----	----	**1.93**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW079_211025	0861_SW080_211025	0861_SW053_211025	0861_SW038_211025	0861_QC161_211025
				Sampling date / time	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00	25-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130835-076	EB2130835-078	EB2130835-080	EB2130835-082	EB2130835-083
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**----**	**4.97**	**----**	**----**	**1.03**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**----**	**5.82**	**----**	**----**	**1.86**
Sum of PFAS	----	0.01	µg/L		**1.03**	**----**	**1.27**	<0.01	**----**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.73**	**----**	**1.01**	<0.01	**----**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.98**	**----**	**1.21**	<0.01	**----**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**120**	**----**	**105**	**102**	**----**
13C4-PFOS	----	0.02	%		**----**	**108**	**----**	**----**	**125**
13C8-PFOA	----	0.02	%		**102**	**----**	**99.7**	**99.4**	**----**
13C8-PFOA	----	0.02	%		**----**	**106**	**----**	**----**	**108**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW002_211025	----	----	----	----
				Sampling date / time	25-Oct-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2130835-085	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.07**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.04**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.40**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.66**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		**0.16**	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.25**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.23**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.07**	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.07**	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.02**	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW002_211025	----	----	----	----
				Sampling date / time	25-Oct-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2130835-085	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**1.97**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.06**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**1.91**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	----	----	----	----
13C8-PFOA	----	0.02	%		**110**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2130835**	Page	: 1 of 22
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 28-Oct-2021
Order number	: 60612563 3.1	Date Analysis Commenced	: 01-Nov-2021
C-O-C number	: ----	Issue Date	: 09-Nov-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 85		
No. of samples analysed	: 85		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
	Senior Organic Chemist - PFAS	Brisbane Inorganics, Stafford, QLD
	Senior Organic Chemist - PFAS	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3989319)									
EB2130835-001	0861_SD016_211019	EA055: Moisture Content	----	0.1	%	43.4	43.3	0.3	0% - 20%
EB2130835-022	0861_SD050_211019	EA055: Moisture Content	----	0.1	%	37.0	37.6	1.6	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3989321)									
EB2130815-012	Anonymous	EA055: Moisture Content	----	0.1	%	40.7	42.6	4.6	0% - 20%
EB2130835-068	0861_SD094_211022	EA055: Moisture Content	----	0.1	%	33.6	33.0	2.0	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3989318)									
EB2130835-001	0861_SD016_211019	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0024	0.0023	4.5	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0104	0.0107	2.9	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2130835-022	0861_SD050_211019	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0004	0.0003	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0030	0.0031	0.0	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0064	<0.0064	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3989320)									
EB2130815-012	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3989320) - continued									
EB2130815-012	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0028	0.0027	6.1	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2130835-068	0861_SD094_211022	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0036	0.0043	17.0	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3989318)									
EB2130835-001	0861_SD016_211019	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0008	0.0007	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0012	<0.0012	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.002	<0.002	0.0	No Limit
EB2130835-022	0861_SD050_211019	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0003	0.0003	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0003	0.0003	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	0.0006	<0.0002	102	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3989320)									
EB2130815-012	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0002	0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0002	0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0002	0.0003	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3989320) - continued									
EB2130815-012	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2130835-068	0861_SD094_211022	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.0003	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.0003	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3989318)									
EB2130835-001	0861_SD016_211019	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0012	<0.0012	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0012	<0.0012	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0012	<0.0012	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0012	<0.0012	0.0	No Limit
EB2130835-022	0861_SD050_211019	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3989320)									
EB2130815-012	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2130835-068	0861_SD094_211022	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3989318)									
EB2130835-001	0861_SD016_211019	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2130835-022	0861_SD050_211019	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3989318) - continued									
EB2130835-022	0861_SD050_211019	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3989320)									
EB2130815-012	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2130835-068	0861_SD094_211022	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3988268)									
EB2130835-025	0861_SW036_211020	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3988269)									
EB2130835-045	0861_SW021_211021	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	5.20	5.55	6.6	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	9.50	10.3	8.4	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	1.01	0.98	3.7	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.74	0.75	2.4	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.26	0.28	6.1	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	0.31	0.32	3.7	0% - 50%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3988270)									
EB2130835-076	0861_SW079_211025	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.32	0.32	0.0	0% - 50%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.41	0.41	0.0	0% - 50%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.06	0.06	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.05	0.04	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3988270) - continued									
EB2130835-076	0861_SW079_211025	EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3999276)									
EB2130835-061	0861_MW048_211021	EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.74	0.75	1.7	0% - 20%
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	1.60	1.61	0.6	0% - 20%
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.12	0.12	0.0	No Limit
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.09	0.09	0.0	No Limit
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.03	0.04	0.0	No Limit
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3988268)									
EB2130835-025	0861_SW036_211020	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3988269)									
EB2130835-045	0861_SW021_211021	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.80	0.80	0.0	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	1.40	1.34	4.4	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	2.77	2.65	4.5	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.41	0.38	8.4	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	0.05	0.05	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.7	0.7	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3988270)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3988270) - continued									
EB2130835-076	0861_SW079_211025	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.04	0.03	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.15	0.15	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3999276)									
EB2130835-061	0861_MW048_211021	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.04	0.04	0.0	No Limit
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.16	0.16	0.0	No Limit
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.02	0.0	No Limit
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	<0.10	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3988268)									
EB2130835-025	0861_SW036_211020	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3988269)									
EB2130835-045	0861_SW021_211021	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3988269) - continued									
EB2130835-045	0861_SW021_211021	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.06	<0.06	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3988270)									
EB2130835-076	0861_SW079_211025	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3999276)									
EB2130835-061	0861_MW048_211021	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3988268)									
EB2130835-025	0861_SW036_211020	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3988269)									
EB2130835-045	0861_SW021_211021	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3988270)									
EB2130835-076	0861_SW079_211025	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3999276)									
EB2130835-061	0861_MW048_211021	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 3988268)									
EB2130835-025	0861_SW036_211020	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231P: PFAS Sums (QC Lot: 3988269)									
EB2130835-045	0861_SW021_211021	EP231X: Sum of PFAS	----	0.01	µg/L	23.2	24.1	4.0	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	14.7	15.8	7.5	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	21.8	22.7	4.1	0% - 20%
EP231P: PFAS Sums (QC Lot: 3988270)									
EB2130835-076	0861_SW079_211025	EP231X: Sum of PFAS	----	0.01	µg/L	1.03	1.01	2.0	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.73	0.73	0.0	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.98	0.97	1.0	0% - 20%
EP231P: PFAS Sums (QC Lot: 3999276)									
EB2130835-061	0861_MW048_211021	EP231X-INJ: Sum of PFAS	----	0.01	µg/L	2.82	2.87	1.8	0% - 20%
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	2.34	2.36	0.9	0% - 20%
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	2.70	2.74	1.5	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3989318)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	80.9	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	94.9	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	80.9	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	105	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	87.5	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	93.8	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3989320)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	76.8	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	94.9	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	78.8	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	99.2	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	88.4	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	99.6	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3989318)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	83.5	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	80.0	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.2	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.2	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	81.2	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.8	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.8	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.2	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.8	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	74.4	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	89.1	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3989320)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	89.4	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.4	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.6	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.6	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.8	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.2	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.2	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	81.2	64.0	136

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3989320) - continued								
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.0	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.6	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	91.0	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3989318)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	82.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	99.4	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	91.0	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	85.1	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	85.2	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	95.2	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	82.0	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3989320)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	88.1	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	86.5	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	95.5	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	81.9	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.0	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.8	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3989318)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	85.0	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	86.9	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	86.7	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	78.8	54.8	124
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3989320)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	88.5	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	97.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	108	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	90.0	54.8	124

Sub-Matrix: **WATER**

		Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
			Spike	Spike Recovery (%)	Acceptable Limits (%)

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3988268)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	115	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	96.9	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	110	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	115	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	118	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	111	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3988269)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	115	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	107	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	111	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	112	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	100	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	109	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3988270)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	109	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	104	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	107	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	107	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	103	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	110	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3999276)								
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.444 µg/L	98.4	72.0	130
EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.47 µg/L	101	71.0	127
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.475 µg/L	99.4	68.0	131
EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.477 µg/L	123	69.0	134
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.4646 µg/L	111	65.0	140
EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	135	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3988268)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	108	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	115	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	115	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	111	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	113	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	95.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	113	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	111	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	115	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	112	65.0	144

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3988268) - continued								
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	119	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3988269)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	101	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	111	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	114	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	106	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	107	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	103	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	114	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	108	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	96.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	105	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3988270)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	110	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	106	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	119	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	110	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	120	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	115	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	113	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	117	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	116	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	111	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	112	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3999276)								
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	102	73.0	129
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	106	72.0	129
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	120	72.0	129
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	108	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	94.4	71.0	133
EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	107	69.0	130
EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	102	71.0	129
EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	111	69.0	133
EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	111	72.0	134
EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	118	65.0	144
EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	111	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3988268)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3988268) - continued								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	102	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	117	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	121	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	101	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	107	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	125	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	116	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3988269)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	101	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	123	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	97.8	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	113	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	108	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	89.8	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	89.0	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3988270)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	105	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	95.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	113	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	109	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	114	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	102	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	110	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3999276)								
EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	89.2	67.0	137
EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	117	68.0	141

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3999276) - continued								
EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	123	62.1	136
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	111	65.2	135
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	118	63.2	135
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	116	65.0	136
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	107	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3988268)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	110	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	123	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	99.8	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	112	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3988269)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	108	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	108	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	92.3	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	120	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3988270)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	107	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	121	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	121	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	128	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3999276)								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.469 µg/L	115	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.476 µg/L	129	64.0	140
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.48 µg/L	99.8	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.483 µg/L	139	62.2	139
EP231P: PFAS Sums (QCLot: 3988268)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 3988269)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231P: PFAS Sums (QCLot: 3988269) - continued								
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 3988270)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 3999276)								
EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3989318)							
EB2130835-003	0861_SD004_211019	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	96.8	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	107	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	97.0	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	112	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	136	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	108	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3989320)							
EB2130815-014	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	# Not Determined	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	# Not Determined	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	# Not Determined	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	# Not Determined	59.0	134

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3989318)							
EB2130835-003	0861_SD004_211019	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	97.1	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	94.8	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	101	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	93.6	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	89.6	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	105	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	98.0	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	102	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	113	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	72.4	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	96.8	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3989320)							
EB2130815-014	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	# Not Determined	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	# Not Determined	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	# Not Determined	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	# Not Determined	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	# Not Determined	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	# Not Determined	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	# Not Determined	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	# Not Determined	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	# Not Determined	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	# Not Determined	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3989318)							
EB2130835-003	0861_SD004_211019	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	91.6	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	103	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	103	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3989318) - continued							
EB2130835-003	0861_SD004_211019	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	93.1	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	101	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	89.6	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	84.8	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3989320)							
EB2130815-014	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	# Not Determined	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	# Not Determined	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	# Not Determined	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3989318)							
EB2130835-003	0861_SD004_211019	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	95.7	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	96.2	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	92.5	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	71.2	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3989320)							
EB2130815-014	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	# Not Determined	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	# Not Determined	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	# Not Determined	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	# Not Determined	70.0	130

Sub-Matrix: **WATER**

		Matrix Spike (MS) Report			
		Spike	SpikeRecovery(%)	Acceptable Limits (%)	

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3988269)							
EB2130835-046	0861_MW030_211021	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	128	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	78.8	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	107	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	115	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	110	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	114	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3999276)							
EB2130835-071	0861_SW064_211025	EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.443 µg/L	89.2	70.0	130
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.47 µg/L	94.9	70.0	130
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.475 µg/L	92.8	70.0	130
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.477 µg/L	119	70.0	130
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	74.0	70.0	130
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.482 µg/L	126	70.0	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3988269)							
EB2130835-046	0861_MW030_211021	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	110	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	110	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	101	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	95.7	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	113	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	110	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	114	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	107	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	106	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	100	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	106	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3999276)							
EB2130835-071	0861_SW064_211025	EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	94.9	70.0	130
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	111	70.0	130
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	112	70.0	130
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	94.4	70.0	130
		EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	86.4	70.0	130
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	89.6	70.0	130
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	93.6	70.0	130
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	107	70.0	130
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	111	70.0	130
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	118	70.0	130
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	105	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3988269)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3988269) - continued							
EB2130835-046	0861_MW030_211021	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	96.8	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	97.1	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	105	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	115	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	110	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	117	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	106	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3999276)							
EB2130835-071	0861_SW064_211025	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	86.6	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	117	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	112	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	124	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	107	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	116	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	123	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3988269)							
EB2130835-046	0861_MW030_211021	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	100	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	95.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	94.8	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	110	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3999276)							
EB2130835-071	0861_SW064_211025	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.468 µg/L	102	70.0	130
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.475 µg/L	98.5	70.0	130
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.48 µg/L	112	70.0	130
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.483 µg/L	118	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2130835**	Page	: 1 of 14
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 28-Oct-2021
Site	: ----	Issue Date	: 09-Nov-2021
Sampler	: [redacted]	No. of samples received	: 85
Order number	: 60612563 3.1	No. of samples analysed	: 85

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	3	46	6.52	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	46	2.17	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / Client Sample ID(s)	***Sample Date***	*Extraction / Preparation* ***Date extracted***	*Due for extraction*	*Evaluation*	*Analysis* ***Date analysed***	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) 0861_SD016_211019, 0861_SD004_211019, 0861_SD005_211019, 0861_SD015_211019, 0861_SD020_211019, 0861_SD018_211019, 0861_SD034_211019, 0861_SD028_211019, 0861_QC154_211019, 0861_SD051_211019, 0861_SD050_211019	**19-Oct-2021**	**----**	----	----	**02-Nov-2021**	02-Nov-2021	✓
HDPE Soil Jar (EA055) 0861_QC156_211020, 0861_SD036_211020, 0861_SD099_211020, 0861_SD100_211020, 0861_SD047_211020, 0861_SD088_211020, 0861_SD052_211020, 0861_SD089_211020, 0861_SD049_211020	**20-Oct-2021**	**----**	----	----	**02-Nov-2021**	03-Nov-2021	✓
HDPE Soil Jar (EA055) 0861_SD021_211021, 0861_QC158_211021, 0861_SD091_211021	**21-Oct-2021**	**----**	----	----	**02-Nov-2021**	04-Nov-2021	✓
HDPE Soil Jar (EA055) 0861_QC160_211022, 0861_SD003_211022, 0861_SD094_211022, 0861_SD009_211022	**22-Oct-2021**	**----**	----	----	**02-Nov-2021**	05-Nov-2021	✓
HDPE Soil Jar (EA055) 0861_SD064_211025, 0861_SD067_211025, 0861_SD079_211025, 0861_SD080_211025, 0861_SD053_211025, 0861_SD038_211025, 0861_SD002_211025	**25-Oct-2021**	**----**	----	----	**02-Nov-2021**	08-Nov-2021	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD016_211019, 0861_SD004_211019, 0861_SD005_211019, 0861_SD015_211019, 0861_SD020_211019, 0861_SD018_211019, 0861_SD034_211019, 0861_SD028_211019, 0861_QC154_211019, 0861_SD051_211019, 0861_SD050_211019	**19-Oct-2021**	**02-Nov-2021**	17-Apr-2022	✓	**04-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC156_211020, 0861_SD036_211020, 0861_SD099_211020, 0861_SD100_211020, 0861_SD047_211020, 0861_SD088_211020, 0861_SD052_211020, 0861_SD089_211020, 0861_SD049_211020	**20-Oct-2021**	**02-Nov-2021**	18-Apr-2022	✓	**04-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD021_211021, 0861_QC158_211021, 0861_SD091_211021	**21-Oct-2021**	**02-Nov-2021**	19-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC160_211022, 0861_SD003_211022, 0861_SD094_211022, 0861_SD009_211022	**22-Oct-2021**	**02-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD064_211025, 0861_SD067_211025, 0861_SD079_211025, 0861_SD080_211025, 0861_SD053_211025, 0861_SD038_211025, 0861_SD002_211025	**25-Oct-2021**	**02-Nov-2021**	23-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X)							
0861_SD016_211019, 0861_SD004_211019, 0861_SD005_211019, 0861_SD015_211019, 0861_SD020_211019, 0861_SD018_211019, 0861_SD034_211019, 0861_SD028_211019, 0861_QC154_211019, 0861_SD051_211019, 0861_SD050_211019	**19-Oct-2021**	**02-Nov-2021**	17-Apr-2022	✓	**04-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X)							
0861_QC156_211020, 0861_SD036_211020, 0861_SD099_211020, 0861_SD100_211020, 0861_SD047_211020, 0861_SD088_211020, 0861_SD052_211020, 0861_SD089_211020, 0861_SD049_211020	**20-Oct-2021**	**02-Nov-2021**	18-Apr-2022	✓	**04-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X)							
0861_SD021_211021, 0861_QC158_211021, 0861_SD091_211021	**21-Oct-2021**	**02-Nov-2021**	19-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X)							
0861_QC160_211022, 0861_SD003_211022, 0861_SD094_211022, 0861_SD009_211022	**22-Oct-2021**	**02-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X)							
0861_SD064_211025, 0861_SD067_211025, 0861_SD079_211025, 0861_SD080_211025, 0861_SD053_211025, 0861_SD038_211025, 0861_SD002_211025	**25-Oct-2021**	**02-Nov-2021**	23-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0861_SD016_211019, 0861_SD004_211019, 0861_SD005_211019, 0861_SD015_211019, 0861_SD020_211019, 0861_SD018_211019, 0861_SD034_211019, 0861_SD028_211019, 0861_QC154_211019, 0861_SD051_211019, 0861_SD050_211019	**19-Oct-2021**	**02-Nov-2021**	17-Apr-2022	✓	**04-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC156_211020, 0861_SD036_211020, 0861_SD099_211020, 0861_SD100_211020, 0861_SD047_211020, 0861_SD088_211020, 0861_SD052_211020, 0861_SD089_211020, 0861_SD049_211020	**20-Oct-2021**	**02-Nov-2021**	18-Apr-2022	✓	**04-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD021_211021, 0861_QC158_211021, 0861_SD091_211021	**21-Oct-2021**	**02-Nov-2021**	19-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC160_211022, 0861_SD003_211022, 0861_SD094_211022, 0861_SD009_211022	**22-Oct-2021**	**02-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD064_211025, 0861_SD067_211025, 0861_SD079_211025, 0861_SD080_211025, 0861_SD053_211025, 0861_SD038_211025, 0861_SD002_211025	**25-Oct-2021**	**02-Nov-2021**	23-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD016_211019, 0861_SD004_211019, 0861_SD005_211019, 0861_SD015_211019, 0861_SD020_211019, 0861_SD018_211019, 0861_SD034_211019, 0861_SD028_211019, 0861_QC154_211019, 0861_SD051_211019, 0861_SD050_211019	**19-Oct-2021**	**02-Nov-2021**	17-Apr-2022	✓	**04-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC156_211020, 0861_SD036_211020, 0861_SD099_211020, 0861_SD100_211020, 0861_SD047_211020, 0861_SD088_211020, 0861_SD052_211020, 0861_SD089_211020, 0861_SD049_211020	**20-Oct-2021**	**02-Nov-2021**	18-Apr-2022	✓	**04-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD021_211021, 0861_QC158_211021, 0861_SD091_211021	**21-Oct-2021**	**02-Nov-2021**	19-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC160_211022, 0861_SD003_211022, 0861_SD094_211022, 0861_SD009_211022	**22-Oct-2021**	**02-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD064_211025, 0861_SD067_211025, 0861_SD079_211025, 0861_SD080_211025, 0861_SD053_211025, 0861_SD038_211025, 0861_SD002_211025	**25-Oct-2021**	**02-Nov-2021**	23-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0861_SD016_211019, 0861_SD004_211019, 0861_SD005_211019, 0861_SD015_211019, 0861_SD020_211019, 0861_SD018_211019, 0861_SD034_211019, 0861_SD028_211019, 0861_QC154_211019, 0861_SD051_211019, 0861_SD050_211019	**19-Oct-2021**	**02-Nov-2021**	17-Apr-2022	✓	**04-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC156_211020, 0861_SD036_211020, 0861_SD099_211020, 0861_SD100_211020, 0861_SD047_211020, 0861_SD088_211020, 0861_SD052_211020, 0861_SD089_211020, 0861_SD049_211020	**20-Oct-2021**	**02-Nov-2021**	18-Apr-2022	✓	**04-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD021_211021, 0861_QC158_211021, 0861_SD091_211021	**21-Oct-2021**	**02-Nov-2021**	19-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_QC160_211022, 0861_SD003_211022, 0861_SD094_211022, 0861_SD009_211022	**22-Oct-2021**	**02-Nov-2021**	20-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
HDPE Soil Jar (EP231X) 0861_SD064_211025, 0861_SD067_211025, 0861_SD079_211025, 0861_SD080_211025, 0861_SD053_211025, 0861_SD038_211025, 0861_SD002_211025	**25-Oct-2021**	**02-Nov-2021**	23-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_SW016_211019, 0861_SW004_211019, 0861_SW005_211019, 0861_SW015_211019, 0861_SW020_211019, 0861_SW018_211019, 0861_SW034_211019, 0861_SW028_211019, 0861_QC153_211019, 0861_SW051_211019, 0861_SW050_211019	**19-Oct-2021**	**05-Nov-2021**	17-Apr-2022	✓	**05-Nov-2021**	17-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_QC155_211020, 0861_SW036_211020, 0861_SW099_211020, 0861_SW100_211020, 0861_SW047_211020, 0861_SW088_211020, 0861_SW052_211020, 0861_SW089_211020, 0861_SW049_211020	**20-Oct-2021**	**05-Nov-2021**	18-Apr-2022	✓	**05-Nov-2021**	18-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_MW002_211021, 0861_QC157_211021, 0861_SW021_211021, 0861_MW030_211021, 0861_MW031_211021, 0861_MW034_211021, 0861_SW091_211021, 0861_MW036_211021, 0861_MW028_211021, 0861_MW029_211021, 0861_MW044_211021, 0861_MW024_211021, 0861_MW055D_211021, 0861_MW055S_211021	**21-Oct-2021**	**05-Nov-2021**	19-Apr-2022	✓	**05-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_MW035_211021, 0861_MW022_211021, 0861_MW049_211021, 0861_MW048_211021	**21-Oct-2021**	**05-Nov-2021**	19-Apr-2022	✓	**06-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_QC159_211022, 0861_MW041_211022, 0861_SW003_211022, 0861_SW094_211022, 0861_SW009_211022	**22-Oct-2021**	**05-Nov-2021**	20-Apr-2022	✓	**06-Nov-2021**	20-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_SW064_211025, 0861_SW067_211025, 0861_SW079_211025, 0861_SW080_211025, 0861_SW053_211025, 0861_SW038_211025, 0861_QC161_211025, 0861_SW002_211025	**25-Oct-2021**	**05-Nov-2021**	23-Apr-2022	✓	**06-Nov-2021**	23-Apr-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0861_SW016_211019, 0861_SW004_211019, 0861_SW005_211019, 0861_SW015_211019, 0861_SW020_211019, 0861_SW018_211019, 0861_SW034_211019, 0861_SW028_211019, 0861_QC153_211019, 0861_SW051_211019, 0861_SW050_211019	**19-Oct-2021**	**05-Nov-2021**	17-Apr-2022	✓	**05-Nov-2021**	17-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_QC155_211020, 0861_SW036_211020, 0861_SW099_211020, 0861_SW100_211020, 0861_SW047_211020, 0861_SW088_211020, 0861_SW052_211020, 0861_SW089_211020, 0861_SW049_211020	**20-Oct-2021**	**05-Nov-2021**	18-Apr-2022	✓	**05-Nov-2021**	18-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_MW002_211021, 0861_QC157_211021, 0861_SW021_211021, 0861_MW030_211021, 0861_MW031_211021, 0861_MW034_211021, 0861_SW091_211021, 0861_MW036_211021, 0861_MW028_211021, 0861_MW029_211021, 0861_MW044_211021, 0861_MW024_211021, 0861_MW055D_211021, 0861_MW055S_211021	**21-Oct-2021**	**05-Nov-2021**	19-Apr-2022	✓	**05-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_MW035_211021, 0861_MW022_211021, 0861_MW049_211021, 0861_MW048_211021	**21-Oct-2021**	**05-Nov-2021**	19-Apr-2022	✓	**06-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_QC159_211022, 0861_MW041_211022, 0861_SW003_211022, 0861_SW094_211022, 0861_SW009_211022	**22-Oct-2021**	**05-Nov-2021**	20-Apr-2022	✓	**06-Nov-2021**	20-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_SW064_211025, 0861_SW067_211025, 0861_SW079_211025, 0861_SW080_211025, 0861_SW053_211025, 0861_SW038_211025, 0861_QC161_211025, 0861_SW002_211025	**25-Oct-2021**	**05-Nov-2021**	23-Apr-2022	✓	**06-Nov-2021**	23-Apr-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0861_SW016_211019, 0861_SW004_211019, 0861_SW005_211019, 0861_SW015_211019, 0861_SW020_211019, 0861_SW018_211019, 0861_SW034_211019, 0861_SW028_211019, 0861_QC153_211019, 0861_SW051_211019, 0861_SW050_211019	**19-Oct-2021**	**05-Nov-2021**	17-Apr-2022	✓	**05-Nov-2021**	17-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_QC155_211020, 0861_SW036_211020, 0861_SW099_211020, 0861_SW100_211020, 0861_SW047_211020, 0861_SW088_211020, 0861_SW052_211020, 0861_SW089_211020, 0861_SW049_211020	**20-Oct-2021**	**05-Nov-2021**	18-Apr-2022	✓	**05-Nov-2021**	18-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_MW002_211021, 0861_QC157_211021, 0861_SW021_211021, 0861_MW030_211021, 0861_MW031_211021, 0861_MW034_211021, 0861_SW091_211021, 0861_MW036_211021, 0861_MW028_211021, 0861_MW029_211021, 0861_MW044_211021, 0861_MW024_211021, 0861_MW055D_211021, 0861_MW055S_211021	**21-Oct-2021**	**05-Nov-2021**	19-Apr-2022	✓	**05-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_MW035_211021, 0861_MW022_211021, 0861_MW049_211021, 0861_MW048_211021	**21-Oct-2021**	**05-Nov-2021**	19-Apr-2022	✓	**06-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_QC159_211022, 0861_MW041_211022, 0861_SW003_211022, 0861_SW094_211022, 0861_SW009_211022	**22-Oct-2021**	**05-Nov-2021**	20-Apr-2022	✓	**06-Nov-2021**	20-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_SW064_211025, 0861_SW067_211025, 0861_SW079_211025, 0861_SW080_211025, 0861_SW053_211025, 0861_SW038_211025, 0861_QC161_211025, 0861_SW002_211025	**25-Oct-2021**	**05-Nov-2021**	23-Apr-2022	✓	**06-Nov-2021**	23-Apr-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_SW016_211019, 0861_SW004_211019, 0861_SW005_211019, 0861_SW015_211019, 0861_SW020_211019, 0861_SW018_211019, 0861_SW034_211019, 0861_SW028_211019, 0861_QC153_211019, 0861_SW051_211019, 0861_SW050_211019	**19-Oct-2021**	**05-Nov-2021**	17-Apr-2022	✓	**05-Nov-2021**	17-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_QC155_211020, 0861_SW036_211020, 0861_SW099_211020, 0861_SW100_211020, 0861_SW047_211020, 0861_SW088_211020, 0861_SW052_211020, 0861_SW089_211020, 0861_SW049_211020	**20-Oct-2021**	**05-Nov-2021**	18-Apr-2022	✓	**05-Nov-2021**	18-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_MW002_211021, 0861_QC157_211021, 0861_SW021_211021, 0861_MW030_211021, 0861_MW031_211021, 0861_MW034_211021, 0861_SW091_211021, 0861_MW036_211021, 0861_MW028_211021, 0861_MW029_211021, 0861_MW044_211021, 0861_MW024_211021, 0861_MW055D_211021, 0861_MW055S_211021	**21-Oct-2021**	**05-Nov-2021**	19-Apr-2022	✓	**05-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_MW035_211021, 0861_MW022_211021, 0861_MW049_211021, 0861_MW048_211021	**21-Oct-2021**	**05-Nov-2021**	19-Apr-2022	✓	**06-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_QC159_211022, 0861_MW041_211022, 0861_SW003_211022, 0861_SW094_211022, 0861_SW009_211022	**22-Oct-2021**	**05-Nov-2021**	20-Apr-2022	✓	**06-Nov-2021**	20-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_SW064_211025, 0861_SW067_211025, 0861_SW079_211025, 0861_SW080_211025, 0861_SW053_211025, 0861_SW038_211025, 0861_QC161_211025, 0861_SW002_211025	**25-Oct-2021**	**05-Nov-2021**	23-Apr-2022	✓	**06-Nov-2021**	23-Apr-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0861_SW016_211019, 0861_SW004_211019, 0861_SW005_211019, 0861_SW015_211019, 0861_SW020_211019, 0861_SW018_211019, 0861_SW034_211019, 0861_SW028_211019, 0861_QC153_211019, 0861_SW051_211019, 0861_SW050_211019	**19-Oct-2021**	**05-Nov-2021**	17-Apr-2022	✓	**05-Nov-2021**	17-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_QC155_211020, 0861_SW036_211020, 0861_SW099_211020, 0861_SW100_211020, 0861_SW047_211020, 0861_SW088_211020, 0861_SW052_211020, 0861_SW089_211020, 0861_SW049_211020	**20-Oct-2021**	**05-Nov-2021**	18-Apr-2022	✓	**05-Nov-2021**	18-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_MW002_211021, 0861_QC157_211021, 0861_SW021_211021, 0861_MW030_211021, 0861_MW031_211021, 0861_MW034_211021, 0861_SW091_211021, 0861_MW036_211021, 0861_MW028_211021, 0861_MW029_211021, 0861_MW044_211021, 0861_MW024_211021, 0861_MW055D_211021, 0861_MW055S_211021	**21-Oct-2021**	**05-Nov-2021**	19-Apr-2022	✓	**05-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_MW035_211021, 0861_MW022_211021, 0861_MW049_211021, 0861_MW048_211021	**21-Oct-2021**	**05-Nov-2021**	19-Apr-2022	✓	**06-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_QC159_211022, 0861_MW041_211022, 0861_SW003_211022, 0861_SW094_211022, 0861_SW009_211022	**22-Oct-2021**	**05-Nov-2021**	20-Apr-2022	✓	**06-Nov-2021**	20-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_SW064_211025, 0861_SW067_211025, 0861_SW079_211025, 0861_SW080_211025, 0861_SW053_211025, 0861_SW038_211025, 0861_QC161_211025, 0861_SW002_211025	**25-Oct-2021**	**05-Nov-2021**	23-Apr-2022	✓	**06-Nov-2021**	23-Apr-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	46	**6.52**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	46	**6.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	46	**6.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	46	**2.17**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with mobile phase solvent. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2130850**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Page	: 1 of 5
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 28-Oct-2021 12:50	Issue Date	: 02-Nov-2021
Client Requested Due Date	: 05-Nov-2021	Scheduled Reporting Date	: **08-Nov-2021**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 5.0°C, 9.8°C, 6.2°C - Ice present
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 46 / 46

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **2/11/21: SRN has been resent to acknowledge the addition on PFAS to samples 45 and 46 requested by J[redacted].**
- **SPLIT WORK ORDER: It should be noted that ALS has split this work order over the following work orders EB2130835/ EB2130850 due to the size of the sample numbers. For any further information regarding this processing of samples please contact ALS client services division on [redacted]**
- **The laboratory acknowledges your requested reporting date of 5 days, however due to the analytical request and associated procedures involved the requested due date will not be possible. Please note the best practical due date has been assigned.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Extra samples were received labelled as SW090 & SD090 and have been placed on hold. If testing is required on these samples, please contact ALS Client Services at [redacted]**
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2130850-003	26-Oct-2021 00:00	0861_SD008_211026	✓	✓
EB2130850-005	26-Oct-2021 00:00	0861_SD027_211026	✓	✓
EB2130850-007	26-Oct-2021 00:00	0861_SD011_211026	✓	✓
EB2130850-009	26-Oct-2021 00:00	0861_SD056_211026	✓	✓
EB2130850-011	26-Oct-2021 00:00	0861_SD033_211026	✓	✓
EB2130850-016	26-Oct-2021 00:00	0861_SD059_211026	✓	✓
EB2130850-018	26-Oct-2021 00:00	0861_SD037_211026	✓	✓
EB2130850-020	26-Oct-2021 00:00	0861_SD076_211026	✓	✓
EB2130850-023	26-Oct-2021 00:00	0861_QC164_211026	✓	✓
EB2130850-024	26-Oct-2021 00:00	0861_SD030_211026	✓	✓
EB2130850-026	26-Oct-2021 00:00	0861_SD048_211026	✓	✓
EB2130850-028	26-Oct-2021 00:00	0861_SD041_211026	✓	✓
EB2130850-046	21-Oct-2021 00:00	0861_SD090_211021	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2130850-001	25-Oct-2021 00:00	0861_QC162_211025	✓
EB2130850-002	25-Oct-2021 00:00	0861_MW032_211025	✓
EB2130850-004	26-Oct-2021 00:00	0861_SW008_211026	✓
EB2130850-006	26-Oct-2021 00:00	0861_SW027_211026	✓
EB2130850-008	26-Oct-2021 00:00	0861_SW011_211026	✓
EB2130850-010	26-Oct-2021 00:00	0861_SW056_211026	✓
EB2130850-012	26-Oct-2021 00:00	0861_SW033_211026	✓
EB2130850-013	26-Oct-2021 00:00	0861_MW042_211026	✓
EB2130850-014	26-Oct-2021 00:00	0861_MW043_211026	✓
EB2130850-015	26-Oct-2021 00:00	0861_QC163_211026	✓

			WATER - EP231X PFAS - Full Suite (28 analytes)
EB2130850-017	26-Oct-2021 00:00	0861_SW059_211026	✓
EB2130850-019	26-Oct-2021 00:00	0861_SW037_211026	✓
EB2130850-021	26-Oct-2021 00:00	0861_SW076_211026	✓
EB2130850-022	26-Oct-2021 00:00	0861_SW030_211026	✓
EB2130850-025	26-Oct-2021 00:00	0861_MW309_211026	✓
EB2130850-027	26-Oct-2021 00:00	0861_MW047_211026	✓
EB2130850-029	26-Oct-2021 00:00	0861_SW041_211026	✓
EB2130850-030	26-Oct-2021 00:00	0861_MW046_211026	✓
EB2130850-031	27-Oct-2021 00:00	0861_MW006_211027	✓
EB2130850-032	27-Oct-2021 00:00	0861_MW023_211027	✓
EB2130850-033	27-Oct-2021 00:00	0861_QC165_211027	✓
EB2130850-034	27-Oct-2021 00:00	0861_MW007_211027	✓
EB2130850-035	27-Oct-2021 00:00	0861_MW025_211027	✓
EB2130850-036	27-Oct-2021 00:00	0861_MW033_211027	✓
EB2130850-037	27-Oct-2021 00:00	0861_MW026_211027	✓
EB2130850-038	27-Oct-2021 00:00	0861_MW037_211027	✓
EB2130850-039	27-Oct-2021 00:00	0861_MW020_211027	✓
EB2130850-040	27-Oct-2021 00:00	0861_MW012_211027	✓
EB2130850-041	27-Oct-2021 00:00	0861_QC166_211027	✓
EB2130850-042	27-Oct-2021 00:00	0861_MW005_211027	✓
EB2130850-043	28-Oct-2021 00:00	0861_MW050_211028	✓
EB2130850-044	28-Oct-2021 00:00	0861_MW021_211028	✓
EB2130850-045	21-Oct-2021 00:00	0861_SW090_211021	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2130850**	Page	: 1 of 29
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 28-Oct-2021 12:50
Order number	: 60612563 3.1	Date Analysis Commenced	: 02-Nov-2021
C-O-C number	: ----	Issue Date	: 08-Nov-2021 17:07
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 46		
No. of samples analysed	: 46		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
[redacted]	Senior Organic Chemist - PFAS	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- **SPLIT WORK ORDER: It should be noted that ALS has split this work order over the following work orders EB2130835/ EB2130850 due to the size of the sample numbers. For any further information regarding this processing of samples please contact ALS client services division on ALSEnviro.Brisbane@alsglobal.com**
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X PFAS: Particular samples required dilution due to the presence of high level contaminants and matrix interference. LOR values have been adjusted accordingly. The LOR of particular analytes have been furhter raised due to sample matrix interferences.
- EP231X-INJ PFAS: The LORs of PFPeA and PFOA for sample “0861_SW008_211026” have been raised due to sample matrix interferences.
- EP231X-INJ PFAS: The LOR of PFBS for sample “0861_QC163_211026” has been raised due to sample matrix interferences.
- EP231X PFAS: High MS recovery deemed acceptable as all associated analyte results are less than LOR
- EP231X-INJ PFAS by LCMSMS: Particular samples have been tested to the legacy QSM 5.1 aligned, NATA accredited method due to sample matrix being unsuitable for SPE extraction (high sediment content)
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.
- EP231X-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where only a single sample container is received.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD008_211026	0861_SD027_211026	0861_SD011_211026	0861_SD056_211026	0861_SD033_211026
				Sampling date / time	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130850-003	EB2130850-005	EB2130850-007	EB2130850-009	EB2130850-011
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**43.6**	**23.5**	**29.6**	**52.1**	**37.8**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	**0.0013**	<0.0010	**0.0011**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		**0.0003**	<0.0002	**0.0008**	<0.0010	**0.0013**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0038**	**0.0008**	**0.0075**	**0.0083**	**0.0132**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		**0.0005**	<0.0002	**0.0008**	**0.0012**	**0.0016**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.105**	**0.0083**	**0.0731**	**0.629**	**0.310**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		**0.0045**	<0.0002	<0.0008	**0.0030**	**0.0213**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	**0.005**	<0.005	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		**0.0005**	**0.0002**	**0.0140**	**0.0014**	**0.0016**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0004**	**0.0003**	**0.0096**	**0.0021**	**0.0043**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	**0.0043**	<0.0010	**0.0006**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		**0.0004**	<0.0002	**0.0016**	**0.0012**	**0.0030**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		**0.0003**	<0.0002	**0.0006**	<0.0010	**0.0003**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		**0.0004**	<0.0002	**0.0012**	<0.0010	**0.0003**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		**0.0008**	<0.0002	**0.0017**	**0.0012**	**0.0006**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	**0.0005**	**0.0018**	**0.0015**	**0.0010**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	**0.0004**	<0.0010	**0.0005**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0006	<0.0006	<0.0006	<0.0025	<0.0006
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		**0.0003**	<0.0002	<0.0002	<0.0010	**0.0034**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0006	<0.0006	<0.0006	<0.0025	<0.0006

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD008_211026	0861_SD027_211026	0861_SD011_211026	0861_SD056_211026	0861_SD033_211026
				Sampling date / time	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130850-003	EB2130850-005	EB2130850-007	EB2130850-009	EB2130850-011
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0006	<0.0006	<0.0006	<0.0025	<0.0006
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0006	<0.0006	<0.0006	<0.0025	<0.0006
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0006	<0.0006	<0.0006	<0.0025	<0.0006
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0010	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0010	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0010	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0010	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0010	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0010	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.117**	**0.0101**	**0.124**	**0.649**	**0.364**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.109**	**0.0091**	**0.0806**	**0.637**	**0.323**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.110**	**0.0096**	**0.116**	**0.642**	**0.334**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**87.5**	**100**	**120**	**125**	**97.5**
13C8-PFOA	----	0.0002	%		**82.5**	**85.0**	**105**	**95.0**	**85.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD059_211026	0861_SD037_211026	0861_SD076_211026	0861_QC164_211026	0861_SD030_211026
				Sampling date / time	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130850-016	EB2130850-018	EB2130850-020	EB2130850-023	EB2130850-024
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		38.3	43.8	52.0	49.8	47.6
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		0.0011	0.0004	0.0004	0.0015	0.0014
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		0.0013	0.0004	0.0005	0.0010	0.0010
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		0.0145	0.0055	0.0063	0.0131	0.0111
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		0.0018	0.0006	0.0011	0.0016	0.0014
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		0.106	0.0325	0.117	0.187	0.132
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		0.0070	0.0003	0.0022	0.0007	0.0008
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	0.002	0.002
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		0.0029	0.0005	0.0009	0.0040	0.0036
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		0.0037	0.0009	0.0016	0.0046	0.0048
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		0.0011	0.0003	0.0005	0.0007	0.0007
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		0.0033	0.0008	0.0015	0.0025	0.0020
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		0.0009	0.0003	0.0008	0.0040	0.0026
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		0.0006	0.0005	0.0007	0.0031	0.0034
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		0.0010	<0.0002	0.0009	0.0049	0.0050
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		0.0007	0.0004	0.0005	0.0078	0.0072
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	0.0050	0.0043
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0006	<0.0005	<0.0005	0.0019	0.0020
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		0.0009	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0006	<0.0005	<0.0005	<0.0006	<0.0006

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD059_211026	0861_SD037_211026	0861_SD076_211026	0861_QC164_211026	0861_SD030_211026
				Sampling date / time	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130850-016	EB2130850-018	EB2130850-020	EB2130850-023	EB2130850-024
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0006	<0.0005	<0.0005	<0.0006	<0.0006
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0006	<0.0005	<0.0005	<0.0006	<0.0006
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0006	<0.0005	<0.0005	<0.0006	<0.0006
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	**0.0015**	**0.0012**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	**0.0008**	**0.0008**
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	**0.0012**	**0.0009**
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.147**	**0.0434**	**0.135**	**0.249**	**0.188**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.120**	**0.0380**	**0.123**	**0.200**	**0.143**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.133**	**0.0409**	**0.128**	**0.218**	**0.160**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**112**	**106**	**80.0**	**112**	**115**
13C8-PFOA	----	0.0002	%		**87.5**	**97.0**	**80.0**	**105**	**92.5**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD048_211026	0861_SD041_211026	0861_SD090_211021	----	----
				Sampling date / time	26-Oct-2021 00:00	26-Oct-2021 00:00	21-Oct-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2130850-026	EB2130850-028	EB2130850-046	--------	--------
					Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**48.9**	**46.8**	**48.7**	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0005	**0.0007**	<0.0002	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		**0.0007**	**0.0010**	<0.0002	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0071**	**0.0149**	<0.0002	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		**0.0009**	**0.0027**	<0.0002	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0967**	**0.178**	<0.0006	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		**0.0019**	**0.0016**	<0.0042	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.002	<0.001	<0.001	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0005	**0.0008**	<0.0002	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0015**	**0.0024**	<0.0002	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0005	**0.0004**	<0.0002	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		**0.0008**	**0.0013**	<0.0002	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0005	<0.0002	<0.0002	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0005	<0.0002	<0.0002	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		**0.0010**	**0.0006**	<0.0002	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		**0.0019**	**0.0005**	<0.0002	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		**0.0021**	<0.0002	<0.0004	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		**0.0023**	<0.0006	<0.0006	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		**0.0036**	**0.0007**	<0.0002	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0012	<0.0006	<0.0020	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD048_211026	0861_SD041_211026	0861_SD090_211021	----	----
				Sampling date / time	26-Oct-2021 00:00	26-Oct-2021 00:00	21-Oct-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2130850-026	EB2130850-028	EB2130850-046	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0012	<0.0006	<0.0006	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0012	<0.0006	<0.0006	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0012	<0.0006	<0.0006	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0005	<0.0002	<0.0004	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0005	<0.0002	<0.0006	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		**0.0040**	<0.0005	<0.0005	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		**0.0020**	<0.0005	<0.0005	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.126**	**0.206**	<0.0002	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.104**	**0.193**	<0.0002	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.112**	**0.198**	<0.0002	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**125**	**102**	**110**	----	----
13C8-PFOA	----	0.0002	%		**100**	**100**	**90.0**	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_QC162_211025	0861_MW032_211025	0861_SW008_211026	0861_SW027_211026	0861_SW011_211026
				Sampling date / time	25-Oct-2021 00:00	25-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00
					EB2130850-001	EB2130850-002	EB2130850-004	EB2130850-006	EB2130850-008
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	----	**0.08**	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	----	**0.03**	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		----	----	**0.26**	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	----	<0.02	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	----	**0.41**	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	----	<0.02	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.65**	**1.68**	----	**0.06**	**0.18**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.57**	**1.50**	----	**0.06**	**0.16**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**9.19**	**9.21**	----	**0.44**	**1.72**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.81**	**0.86**	----	**0.02**	**0.09**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**23.6**	**24.0**	----	**0.55**	**2.15**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.10	<0.10	----	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		----	----	<0.10	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	----	<0.04	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	----	**0.05**	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	----	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	----	<0.02	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	----	<0.02	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	----	<0.02	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	----	<0.02	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	----	<0.02	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC162_211025	0861_MW032_211025	0861_SW008_211026	0861_SW027_211026	0861_SW011_211026
				Sampling date / time	25-Oct-2021 00:00	25-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130850-001	EB2130850-002	EB2130850-004	EB2130850-006	EB2130850-008
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	----	<0.02	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	----	<0.05	----	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.5	<0.5	----	<0.1	**0.1**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.77**	**0.76**	----	**0.10**	**0.17**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**4.41**	**4.36**	----	**0.15**	**0.38**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.96**	**0.98**	----	**0.05**	**0.06**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**2.21**	**2.27**	----	**0.05**	**0.11**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.10	<0.10	----	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.10	<0.10	----	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.10	<0.10	----	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.10	<0.10	----	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.10	<0.10	----	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.25	<0.25	----	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	----	<0.02	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	----	<0.05	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	----	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	----	<0.05	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	----	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	----	<0.02	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	----	<0.02	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC162_211025	0861_MW032_211025	0861_SW008_211026	0861_SW027_211026	0861_SW011_211026
				Sampling date / time	25-Oct-2021 00:00	25-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130850-001	EB2130850-002	EB2130850-004	EB2130850-006	EB2130850-008
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.10	<0.10	----	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.25	<0.25	----	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.25	<0.25	----	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.25	<0.25	----	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.25	<0.25	----	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.10	<0.10	----	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.10	<0.10	----	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	----	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		----	----	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		----	----	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		----	----	<0.05	----	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.10	<0.10	----	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.10	**0.13**	----	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.10	<0.10	----	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.10	<0.10	----	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		----	----	**0.83**	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC162_211025	0861_MW032_211025	0861_SW008_211026	0861_SW027_211026	0861_SW011_211026
				Sampling date / time	25-Oct-2021 00:00	25-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130850-001	EB2130850-002	EB2130850-004	EB2130850-006	EB2130850-008
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**----**	**----**	**0.67**	**----**	**----**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**----**	**----**	**0.80**	**----**	**----**
Sum of PFAS	----	0.01	µg/L		**45.2**	**45.8**	**----**	**1.48**	**5.12**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**32.8**	**33.2**	**----**	**0.99**	**3.87**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**42.8**	**43.4**	**----**	**1.40**	**4.87**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.2**	**98.3**	**----**	**106**	**94.2**
13C4-PFOS	----	0.02	%		**----**	**----**	**96.5**	**----**	**----**
13C8-PFOA	----	0.02	%		**98.3**	**98.5**	**----**	**103**	**102**
13C8-PFOA	----	0.02	%		**----**	**----**	**97.1**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW056_211026	0861_SW033_211026	0861_MW042_211026	0861_MW043_211026	0861_QC163_211026
				Sampling date / time	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130850-010	EB2130850-012	EB2130850-013	EB2130850-014	EB2130850-015
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.29**	**2.54**	<0.02	**0.36**	<0.04
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.24**	**2.94**	<0.02	**0.08**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.43**	**22.1**	**0.03**	**0.22**	**0.04**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.06**	**0.89**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.13**	**78.6**	**0.03**	**0.27**	**0.02**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	**0.47**	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		**0.27**	**1.96**	<0.10	**0.10**	<0.10
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.52**	**3.05**	<0.02	**0.08**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.79**	**8.49**	<0.02	**0.21**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.14**	**0.94**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.15**	**2.70**	<0.02	**0.02**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	**0.08**	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	**0.02**	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	**0.11**	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW056_211026	0861_SW033_211026	0861_MW042_211026	0861_MW043_211026	0861_QC163_211026
				Sampling date / time	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130850-010	EB2130850-012	EB2130850-013	EB2130850-014	EB2130850-015
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.10**	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**5.12**	**125**	**0.06**	**1.34**	**0.06**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**2.56**	**101**	**0.06**	**0.49**	**0.06**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**4.82**	**120**	**0.06**	**1.26**	**0.06**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**102**	**89.1**	**101**	**97.9**	**105**
13C8-PFOA	----	0.02	%		**102**	**99.5**	**100**	**99.9**	**100**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW059_211026	0861_SW037_211026	0861_SW076_211026	0861_SW030_211026	0861_MW309_211026
				Sampling date / time	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00
					EB2130850-017	EB2130850-019	EB2130850-021	EB2130850-022	EB2130850-025
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.05**	**0.60**	**0.41**	**1.18**	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.72**	**0.40**	**0.30**	**0.81**	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**4.03**	**2.49**	**1.83**	**6.06**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.25**	**0.13**	**0.10**	**0.34**	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**6.05**	**2.53**	**2.07**	**7.68**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	----	----	----	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	----	----	----	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		----	----	----	----	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	----	----	----	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	----	----	----	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	----	----	----	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		**0.79**	**0.28**	**0.26**	**0.77**	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**1.70**	**0.62**	**0.61**	**1.69**	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**2.27**	**1.17**	**0.95**	**2.91**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.43**	**0.18**	**0.18**	**0.50**	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.59**	**0.22**	**0.20**	**0.59**	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.03**	**0.03**	<0.02	**0.04**	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	**0.02**	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	**0.04**	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW059_211026	0861_SW037_211026	0861_SW076_211026	0861_SW030_211026	0861_MW309_211026
				Sampling date / time	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00
					EB2130850-017	EB2130850-019	EB2130850-021	EB2130850-022	EB2130850-025
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		----	----	----	----	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	----	----	----	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	----	----	----	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	----	----	----	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	----	----	----	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	----	----	----	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	----	----	----	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	----	----	----	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	----	----	----	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	----	----	----	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	----	----	----	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW059_211026	0861_SW037_211026	0861_SW076_211026	0861_SW030_211026	0861_MW309_211026
				Sampling date / time	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130850-017	EB2130850-019	EB2130850-021	EB2130850-022	EB2130850-025
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	----	----	----	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	----	----	----	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	----	----	----	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	----	----	----	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	----	----	----	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	----	----	----	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	----	----	----	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.11**	<0.05	**0.18**	**0.72**	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	----	----	----	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		----	----	----	----	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		----	----	----	----	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		----	----	----	----	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**18.0**	**8.65**	**7.09**	**23.4**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW059_211026	0861_SW037_211026	0861_SW076_211026	0861_SW030_211026	0861_MW309_211026
				Sampling date / time	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130850-017	EB2130850-019	EB2130850-021	EB2130850-022	EB2130850-025
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**10.1**	**5.02**	**3.90**	**13.7**	**----**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**17.0**	**8.09**	**6.69**	**22.1**	**----**
Sum of PFAS	----	0.01	µg/L		**----**	**----**	**----**	**----**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**----**	**----**	**----**	**----**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**----**	**----**	**----**	**----**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**----**	**----**	**----**	**----**	**94.0**
13C4-PFOS	----	0.02	%		**95.6**	**110**	**96.2**	**96.0**	**----**
13C8-PFOA	----	0.02	%		**----**	**----**	**----**	**----**	**96.0**
13C8-PFOA	----	0.02	%		**98.3**	**101**	**102**	**98.2**	**----**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW047_211026	0861_SW041_211026	0861_MW046_211026	0861_MW006_211027	0861_MW023_211027
				Sampling date / time	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	27-Oct-2021 00:00	27-Oct-2021 00:00
					EB2130850-027	EB2130850-029	EB2130850-030	EB2130850-031	EB2130850-032
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.58**	**0.30**	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.67**	**0.23**	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**3.58**	**1.84**	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.23**	**0.13**	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**5.21**	**2.61**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	----	**12.5**	**1.44**	**0.07**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	----	**11.6**	**1.12**	**0.07**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		----	----	**83.4**	**8.72**	**0.45**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	----	**6.70**	**0.44**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	----	**194**	**44.0**	**0.07**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	----	<0.50	<0.10	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		**0.72**	<0.10	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.82**	**0.14**	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.58**	**0.52**	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.03**	**0.06**	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.07**	**0.10**	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW047_211026	0861_SW041_211026	0861_MW046_211026	0861_MW006_211027	0861_MW023_211027
				Sampling date / time	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	27-Oct-2021 00:00	27-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130850-027	EB2130850-029	EB2130850-030	EB2130850-031	EB2130850-032
					Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		----	----	**11.6**	**0.5**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	----	**25.9**	**1.80**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	----	**50.0**	**3.89**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	----	**9.55**	**0.59**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	----	**21.7**	**1.00**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	----	<0.50	<0.10	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	----	<0.50	<0.10	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	----	<0.50	<0.10	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	----	<0.50	<0.10	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	----	<0.50	<0.10	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	----	<1.25	<0.25	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW047_211026	0861_SW041_211026	0861_MW046_211026	0861_MW006_211027	0861_MW023_211027
				Sampling date / time	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	27-Oct-2021 00:00	27-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130850-027	EB2130850-029	EB2130850-030	EB2130850-031	EB2130850-032
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	----	<0.50	**0.10**	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	----	<1.25	<0.25	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	----	<1.25	<0.25	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	----	<1.25	<0.25	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	----	<1.25	<0.25	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	----	<0.50	<0.10	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	----	<0.50	<0.10	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	----	<0.50	<0.10	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		----	----	**33.6**	**0.37**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		----	----	**1.75**	<0.10	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		----	----	<0.50	<0.10	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**14.5**	**5.93**	----	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW047_211026	0861_SW041_211026	0861_MW046_211026	0861_MW006_211027	0861_MW023_211027
				Sampling date / time	26-Oct-2021 00:00	26-Oct-2021 00:00	26-Oct-2021 00:00	27-Oct-2021 00:00	27-Oct-2021 00:00
					EB2130850-027	EB2130850-029	EB2130850-030	EB2130850-031	EB2130850-032
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**8.79**	**4.45**	**----**	**----**	**----**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**13.6**	**5.57**	**----**	**----**	**----**
Sum of PFAS	----	0.01	µg/L		**----**	**----**	**462**	**64.0**	**0.66**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**----**	**----**	**277**	**52.7**	**0.52**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**----**	**----**	**444**	**62.3**	**0.59**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**----**	**----**	**91.2**	**89.3**	**97.1**
13C4-PFOS	----	0.02	%		**104**	**100**	**----**	**----**	**----**
13C8-PFOA	----	0.02	%		**----**	**----**	**97.1**	**99.5**	**100**
13C8-PFOA	----	0.02	%		**101**	**99.5**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_QC165_211027	0861_MW007_211027	0861_MW025_211027	0861_MW033_211027	0861_MW026_211027
				Sampling date / time	27-Oct-2021 00:00	27-Oct-2021 00:00	27-Oct-2021 00:00	27-Oct-2021 00:00	27-Oct-2021 00:00
					EB2130850-033	EB2130850-034	EB2130850-035	EB2130850-036	EB2130850-037
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**2.04**	**2.13**	**0.13**	<0.04	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**2.54**	**2.36**	**0.10**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**18.1**	**19.5**	**0.58**	<0.02	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**1.40**	**1.41**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**33.6**	**33.9**	**0.14**	<0.02	<0.02
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.04	<0.04	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.4**	**0.4**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.81**	**0.85**	**0.03**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**3.90**	**3.81**	**0.08**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.57**	**0.59**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**1.37**	**1.35**	**0.02**	<0.02	<0.02
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.04	<0.04	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.04	<0.04	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.04	<0.04	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.04	<0.04	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.04	<0.04	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.11	<0.09	<0.05	<0.06	<0.06
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.42	<0.48	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.11	<0.09	<0.05	<0.06	<0.06
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.11	<0.09	<0.05	<0.06	<0.06

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC165_211027	0861_MW007_211027	0861_MW025_211027	0861_MW033_211027	0861_MW026_211027
				Sampling date / time	27-Oct-2021 00:00	27-Oct-2021 00:00	27-Oct-2021 00:00	27-Oct-2021 00:00	27-Oct-2021 00:00
Compound	CAS Number	LOR	Unit		EB2130850-033	EB2130850-034	EB2130850-035	EB2130850-036	EB2130850-037
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.11	<0.09	<0.05	<0.06	<0.06
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.11	<0.09	<0.05	<0.06	<0.06
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.04	<0.04	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.04	<0.04	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.12**	<0.15	<0.05	**0.11**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**64.8**	**66.3**	**1.08**	**0.11**	<0.02
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**51.7**	**53.4**	**0.72**	<0.02	<0.02
Sum of PFAS (WA DER List)	----	0.01	µg/L		**60.9**	**62.5**	**0.98**	**0.11**	<0.02
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**88.3**	**80.9**	**87.2**	**90.5**	**86.3**
13C8-PFOA	----	0.02	%		**101**	**103**	**98.7**	**94.6**	**97.8**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW037_211027	0861_MW020_211027	0861_MW012_211027	0861_QC166_211027	0861_MW005_211027
				Sampling date / time	27-Oct-2021 00:00	27-Oct-2021 00:00	27-Oct-2021 00:00	27-Oct-2021 00:00	27-Oct-2021 00:00
					EB2130850-038	EB2130850-039	EB2130850-040	EB2130850-041	EB2130850-042
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.45**	**0.63**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.24**	**0.75**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**3.78**	**5.78**	<0.01	<0.01	**0.04**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.46**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.02**	**7.07**	**0.02**	**0.02**	**0.01**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.1**	**0.4**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.16**	**0.90**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.97**	**1.71**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.10**	**0.50**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.03**	**0.91**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	**0.06**	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW037_211027	0861_MW020_211027	0861_MW012_211027	0861_QC166_211027	0861_MW005_211027
				Sampling date / time	27-Oct-2021 00:00	27-Oct-2021 00:00	27-Oct-2021 00:00	27-Oct-2021 00:00	27-Oct-2021 00:00
					EB2130850-038	EB2130850-039	EB2130850-040	EB2130850-041	EB2130850-042
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	**0.15**	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**7.85**	**19.3**	**0.02**	**0.02**	**0.05**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**3.80**	**12.8**	**0.02**	**0.02**	**0.05**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**6.61**	**18.0**	**0.02**	**0.02**	**0.05**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**89.6**	**81.5**	**89.0**	**88.4**	**89.3**
13C8-PFOA	----	0.02	%		**97.4**	**102**	**97.2**	**104**	**100**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW050_211028	0861_MW021_211028	0861_SW090_211021	----	----
				Sampling date / time	28-Oct-2021 00:00	28-Oct-2021 00:00	21-Oct-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2130850-043	EB2130850-044	EB2130850-045	--------	--------
					Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.02**	**1.40**	<0.02	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**2.08**	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.07**	**24.4**	<0.01	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**1.60**	<0.02	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.11**	**71.2**	<0.01	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.07	<0.02	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.3	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.70**	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.04**	**3.33**	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.80**	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**3.10**	<0.01	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.07	<0.02	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.07	<0.02	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.07	<0.02	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.07	<0.02	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.07	<0.02	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.17	<0.05	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.07	<0.02	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.17	<0.05	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.17	<0.05	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW050_211028	0861_MW021_211028	0861_SW090_211021	----	----
				Sampling date / time	28-Oct-2021 00:00	28-Oct-2021 00:00	21-Oct-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2130850-043	EB2130850-044	EB2130850-045	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.17	<0.05	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.17	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.07	<0.02	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.07	<0.02	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.07	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.07	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.07	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.07	<0.05	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.24**	**109**	<0.01	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.18**	**95.6**	<0.01	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.24**	**105**	<0.01	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**84.2**	**90.8**	**94.2**	----	----
13C8-PFOA	----	0.02	%		**100**	**102**	**93.7**	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2130850**	Page	: 1 of 23
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 28-Oct-2021
Order number	: 60612563 3.1	Date Analysis Commenced	: 02-Nov-2021
C-O-C number	: ----	Issue Date	: 08-Nov-2021
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 46		
No. of samples analysed	: 46		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
[redacted]	Senior Organic Chemist - PFAS	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3989294)									
EB2130697-001	Anonymous	EA055: Moisture Content	----	0.1	%	13.4	14.0	5.1	0% - 50%
EB2130850-007	0861_SD011_211026	EA055: Moisture Content	----	0.1	%	29.6	29.7	0.0	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3990349)									
EB2130850-046	0861_SD090_211021	EA055: Moisture Content	----	0.1	%	48.7	47.6	2.1	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3989292)									
EB2130697-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0017	0.0017	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2130850-007	0861_SD011_211026	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0013	0.0014	7.8	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	0.0008	0.0008	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0075	0.0065	14.2	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0008	0.0006	20.2	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0731	0.0706	3.4	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0008	<0.0008	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3992261)									
EB2130531-003	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3992261) - continued									
EB2130531-003	Anonymous	EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3989292)									
EB2130697-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2130850-007	0861_SD011_211026	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0140	0.0134	4.3	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0096	0.0089	7.4	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0043	0.0042	2.7	0% - 50%
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0016	0.0014	13.8	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	0.0006	0.0005	25.2	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0012	0.0008	31.8	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0017	0.0014	18.4	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0018	0.0017	8.2	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	0.0004	0.0005	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	0.005	0.005	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3992261)									
EB2130531-003	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3989292)									
EB2130697-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3989292) - continued									
EB2130697-001	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2130850-007	0861_SD011_211026	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3992261)									
EB2130531-003	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3989292)									
EB2130697-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3989292) - continued									
EB2130697-001	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2130850-007	0861_SD011_211026	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3992261)									
EB2130531-003	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3988260)									
EB2130850-035	0861_MW025_211027	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.58	0.57	1.8	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.14	0.14	0.0	0% - 50%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.13	0.13	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.10	0.10	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EB2130850-037	0861_MW026_211027	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3990092)									
EB2131111-004	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3990092) - continued									
EB2131111-004	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 3998058)									
EB2130562-011	Anonymous	EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EB2130850-019	0861_SW037_211026	EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	2.49	2.47	0.6	0% - 20%
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	2.53	2.44	3.8	0% - 20%
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.60	0.58	2.7	0% - 20%
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.40	0.41	2.7	0% - 20%
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.13	0.12	8.6	No Limit
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3988260)									
EB2130850-035	0861_MW025_211027	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.08	0.08	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3988260) - continued									
EB2130850-035	0861_MW025_211027	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EB2130850-037	0861_MW026_211027	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3990092)									
EB2131111-004	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3998058)									
EB2130562-011	Anonymous	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	<0.10	0.0	No Limit
EB2130850-019	0861_SW037_211026	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.22	0.22	0.0	0% - 20%
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.62	0.63	2.4	0% - 20%
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	1.17	1.18	1.1	0% - 20%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 3998058) - continued									
EB2130850-019	0861_SW037_211026	EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.18	0.20	13.3	0% - 50%
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	0.03	0.03	0.0	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.02	0.0	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.28	0.25	11.4	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3988260)									
EB2130850-035	0861_MW025_211027	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2130850-037	0861_MW026_211027	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.06	<0.06	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3990092)									
EB2131111-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3990092) - continued									
EB2131111-004	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 3998058)									
EB2130562-011	Anonymous	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2130850-019	0861_SW037_211026	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3988260)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3988260) - continued									
EB2130850-035	0861_MW025_211027	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2130850-037	0861_MW026_211027	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3990092)									
EB2131111-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3998058)									
EB2130562-011	Anonymous	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2130850-019	0861_SW037_211026	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 3998058) - continued									
EB2130850-019	0861_SW037_211026	EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 3988260)									
EB2130850-035	0861_MW025_211027	EP231X: Sum of PFAS	----	0.01	µg/L	1.08	1.07	0.9	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.72	0.71	1.4	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.98	0.97	1.0	0% - 20%
EB2130850-037	0861_MW026_211027	EP231X: Sum of PFAS	----	0.01	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.02	<0.02	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 3990092)									
EB2131111-004	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 3998058)									
EB2130562-011	Anonymous	EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
EB2130850-019	0861_SW037_211026	EP231X-INJ: Sum of PFAS	----	0.01	µg/L	8.65	8.55	1.2	0% - 20%
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	5.02	4.91	2.2	0% - 20%
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	8.09	7.97	1.5	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3989292)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	85.4	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	95.7	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	74.6	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	100	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	76.3	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	88.3	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3992261)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	80.0	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	86.3	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	67.8	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	90.8	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	75.4	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	88.8	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3989292)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	86.7	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	83.6	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.4	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.4	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	75.6	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.2	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.2	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.2	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.8	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.0	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	86.4	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3992261)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	86.7	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	76.0	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	82.8	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	74.0	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	74.4	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	78.4	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	81.6	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.8	64.0	136

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3992261) - continued								
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.4	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	77.6	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	81.7	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3989292)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	85.9	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	91.2	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	85.2	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	80.8	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.0	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	93.2	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3992261)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	76.8	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	96.8	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	94.4	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	77.6	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	78.7	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.4	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	74.4	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3989292)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	87.2	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	100	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	79.6	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	87.9	54.8	124
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3992261)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	77.8	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	85.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	81.7	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	76.2	54.8	124

Sub-Matrix: **WATER**

	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
		Spike	Spike Recovery (%)	Acceptable Limits (%)

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3988259)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	110	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	108	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	107	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	112	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	116	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	97.7	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3988260)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	125	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	126	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	124	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	121	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	121	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	130	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3990092)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	109	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	102	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	100	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	107	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	109	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	108	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3998058)								
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.444 µg/L	90.5	72.0	130
EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.47 µg/L	109	71.0	127
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.475 µg/L	97.3	68.0	131
EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.477 µg/L	113	69.0	134
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.4646 µg/L	99.9	65.0	140
EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	108	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3988259)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	108	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	110	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	114	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	112	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	117	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	107	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	106	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	119	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	116	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	118	65.0	144

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3988259) - continued								
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	109	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3988260)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	116	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	117	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	119	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	120	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	126	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	123	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	117	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	119	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	122	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	120	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	125	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3990092)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	103	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	105	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	111	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	112	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	112	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	108	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	104	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	114	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	100	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	99.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	100	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3998058)								
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	109	73.0	129
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	109	72.0	129
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	116	72.0	129
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	98.2	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	90.4	71.0	133
EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	106	69.0	130
EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	110	71.0	129
EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	101	69.0	133
EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	107	72.0	134
EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	102	65.0	144
EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	107	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3988259)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3988259) - continued								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	85.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	107	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	95.8	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	110	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	115	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	107	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	117	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3988260)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	127	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	123	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	120	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	126	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	122	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	120	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	126	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3990092)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	88.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	111	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	108	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	114	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	114	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	112	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	112	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3998058)								
EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	102	67.0	137
EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	112	68.0	141

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3998058) - continued								
EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	110	62.1	136
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	109	65.2	135
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	93.8	63.2	135
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	105	65.0	136
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	106	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3988259)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	112	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	110	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	98.1	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	101	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3988260)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	132	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	117	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	124	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	123	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3990092)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	103	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	122	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	105	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	97.1	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3998058)								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.469 µg/L	93.6	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.476 µg/L	107	64.0	140
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.48 µg/L	114	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.483 µg/L	102	62.2	139
EP231P: PFAS Sums (QCLot: 3988259)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 3988260)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231P: PFAS Sums (QCLot: 3988260) - continued								
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 3990092)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 3998058)								
EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3989292)							
EB2130697-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	88.6	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	90.6	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	81.4	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	101	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	81.1	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	91.2	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3992261)							
EB2130531-007	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	77.7	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	89.7	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	79.2	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	91.6	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	73.3	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	84.6	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3989292)							
EB2130697-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	92.0	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	88.4	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	93.2	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	91.6	71.0	131

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3989292) - continued							
EB2130697-002	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	81.2	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	92.4	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	95.6	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	90.8	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	90.8	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	88.4	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	90.9	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3992261)							
EB2130531-007	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	89.7	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	78.8	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	90.4	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	76.0	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	76.4	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	80.8	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	84.0	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	82.0	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	90.0	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	81.2	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	83.8	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3989292)							
EB2130697-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	86.4	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	95.5	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	87.7	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	94.9	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	77.7	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	93.2	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	93.2	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3992261)							
EB2130531-007	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	82.4	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	106	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	87.2	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	85.6	70.0	130

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3992261) - continued							
EB2130531-007	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	82.0	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	93.6	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	78.4	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3989292)							
EB2130697-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	92.7	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	86.0	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	92.9	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	105	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3992261)							
EB2130531-007	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	80.8	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	90.7	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	89.6	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	87.9	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3988260)							
EB2130850-036	0861_MW033_211027	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	117	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	105	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	126	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	107	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	122	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	116	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3990092)							
EB2131111-006	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	116	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	111	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	112	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	121	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	114	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	116	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3998058)							
EB2130562-012	Anonymous	EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.443 µg/L	76.7	70.0	130
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.47 µg/L	85.1	70.0	130
		EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.475 µg/L	86.5	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 3998058) - continued							
EB2130562-012	Anonymous	EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.477 µg/L	102	70.0	130
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	78.0	70.0	130
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.482 µg/L	98.1	70.0	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3988260)							
EB2130850-036	0861_MW033_211027	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	110	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	119	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	118	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	114	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	127	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	122	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	118	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	124	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	116	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	120	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	119	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3990092)							
EB2131111-006	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	112	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	105	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	116	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	111	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	112	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	94.8	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	114	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	116	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	117	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	118	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	117	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3998058)							
EB2130562-012	Anonymous	EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	90.4	70.0	130
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	88.4	70.0	130
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	95.8	70.0	130
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	80.8	70.0	130
		EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	76.0	70.0	130
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	88.2	70.0	130
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	89.2	70.0	130
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	89.4	70.0	130
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	96.0	70.0	130
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	92.2	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 3998058) - continued							
EB2130562-012	Anonymous	EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	91.5	70.0	130
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3988260)							
EB2130850-036	0861_MW033_211027	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	# 141	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	125	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	117	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	111	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	120	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	125	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	123	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3990092)							
EB2131111-006	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	108	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	123	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	124	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	109	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	104	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	107	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	113	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3998058)							
EB2130562-012	Anonymous	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	80.0	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	103	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	91.9	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	98.6	70.0	130
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	82.2	70.0	130
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	91.2	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 3998058) - continued							
EB2130562-012	Anonymous	EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	93.8	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3988260)							
EB2130850-036	0861_MW033_211027	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	122	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	118	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	100	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	# 144	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3990092)							
EB2131111-006	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	104	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	116	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	108	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	103	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 3998058)							
EB2130562-012	Anonymous	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.468 µg/L	86.5	70.0	130
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.475 µg/L	95.4	70.0	130
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.48 µg/L	101	70.0	130
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.483 µg/L	88.4	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2130850**	Page	: 1 of 10
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 28-Oct-2021
Site	: ----	Issue Date	: 08-Nov-2021
Sampler	: [redacted]	No. of samples received	: 46
Order number	: 60612563 3.1	No. of samples analysed	: 46

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231C: Perfluoroalkyl Sulfonamides	EB2130850--036	0861_MW033_211027	**Perfluorooctane sulfonamide (FOSA)**	754-91-6	141 %	59.0-135%	**Recovery greater than upper data quality objective**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	EB2130850--036	0861_MW033_211027	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	144 %	70.0-130%	**Recovery greater than upper data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	3	31	9.68	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055)							
0861_SD090_211021	**21-Oct-2021**	**----**	----	----	**02-Nov-2021**	04-Nov-2021	✓
HDPE Soil Jar (EA055)							
0861_SD008_211026, 0861_SD011_211026, 0861_SD033_211026, 0861_SD037_211026, 0861_QC164_211026, 0861_SD048_211026, 0861_SD027_211026, 0861_SD056_211026, 0861_SD059_211026, 0861_SD076_211026, 0861_SD030_211026, 0861_SD041_211026	**26-Oct-2021**	**----**	----	----	**02-Nov-2021**	09-Nov-2021	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0861_SD090_211021	**21-Oct-2021**	**03-Nov-2021**	19-Apr-2022	✓	**05-Nov-2021**	13-Dec-2021	✓
HDPE Soil Jar (EP231X)							
0861_SD008_211026, 0861_SD027_211026, 0861_SD011_211026, 0861_SD056_211026, 0861_SD033_211026, 0861_SD059_211026, 0861_SD037_211026, 0861_SD076_211026, 0861_QC164_211026, 0861_SD030_211026, 0861_SD048_211026, 0861_SD041_211026	**26-Oct-2021**	**02-Nov-2021**	24-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X)							
0861_SD090_211021	**21-Oct-2021**	**03-Nov-2021**	19-Apr-2022	✓	**05-Nov-2021**	13-Dec-2021	✓
HDPE Soil Jar (EP231X)							
0861_SD008_211026, 0861_SD027_211026, 0861_SD011_211026, 0861_SD056_211026, 0861_SD033_211026, 0861_SD059_211026, 0861_SD037_211026, 0861_SD076_211026, 0861_QC164_211026, 0861_SD030_211026, 0861_SD048_211026, 0861_SD041_211026	**26-Oct-2021**	**02-Nov-2021**	24-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X)							
0861_SD090_211021	**21-Oct-2021**	**03-Nov-2021**	19-Apr-2022	✓	**05-Nov-2021**	13-Dec-2021	✓
HDPE Soil Jar (EP231X)							
0861_SD008_211026, 0861_SD027_211026, 0861_SD011_211026, 0861_SD056_211026, 0861_SD033_211026, 0861_SD059_211026, 0861_SD037_211026, 0861_SD076_211026, 0861_QC164_211026, 0861_SD030_211026, 0861_SD048_211026, 0861_SD041_211026	**26-Oct-2021**	**02-Nov-2021**	24-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0861_SD090_211021	**21-Oct-2021**	**03-Nov-2021**	19-Apr-2022	✓	**05-Nov-2021**	13-Dec-2021	✓
HDPE Soil Jar (EP231X)							
0861_SD008_211026, 0861_SD027_211026, 0861_SD011_211026, 0861_SD056_211026, 0861_SD033_211026, 0861_SD059_211026, 0861_SD037_211026, 0861_SD076_211026, 0861_QC164_211026, 0861_SD030_211026, 0861_SD048_211026, 0861_SD041_211026	**26-Oct-2021**	**02-Nov-2021**	24-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X)							
0861_SD090_211021	**21-Oct-2021**	**03-Nov-2021**	19-Apr-2022	✓	**05-Nov-2021**	13-Dec-2021	✓
HDPE Soil Jar (EP231X)							
0861_SD008_211026, 0861_SD027_211026, 0861_SD011_211026, 0861_SD056_211026, 0861_SD033_211026, 0861_SD059_211026, 0861_SD037_211026, 0861_SD076_211026, 0861_QC164_211026, 0861_SD030_211026, 0861_SD048_211026, 0861_SD041_211026	**26-Oct-2021**	**02-Nov-2021**	24-Apr-2022	✓	**03-Nov-2021**	12-Dec-2021	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_SW090_211021	**21-Oct-2021**	**04-Nov-2021**	19-Apr-2022	✓	**04-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_QC162_211025, 0861_MW032_211025	**25-Oct-2021**	**04-Nov-2021**	23-Apr-2022	✓	**04-Nov-2021**	23-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_SW027_211026, 0861_SW011_211026, 0861_MW309_211026, 0861_MW046_211026	**26-Oct-2021**	**04-Nov-2021**	24-Apr-2022	✓	**04-Nov-2021**	24-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_SW008_211026, 0861_SW056_211026, 0861_SW033_211026, 0861_MW042_211026, 0861_MW043_211026, 0861_QC163_211026, 0861_SW059_211026, 0861_SW037_211026, 0861_SW076_211026, 0861_SW030_211026, 0861_MW047_211026, 0861_SW041_211026	**26-Oct-2021**	**05-Nov-2021**	24-Apr-2022	✓	**05-Nov-2021**	24-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_MW006_211027, 0861_MW023_211027, 0861_QC165_211027, 0861_MW007_211027, 0861_MW025_211027, 0861_MW033_211027, 0861_MW026_211027, 0861_MW037_211027, 0861_MW020_211027, 0861_MW012_211027, 0861_QC166_211027, 0861_MW005_211027	**27-Oct-2021**	**04-Nov-2021**	25-Apr-2022	✓	**04-Nov-2021**	25-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_MW050_211028, 0861_MW021_211028	**28-Oct-2021**	**04-Nov-2021**	26-Apr-2022	✓	**04-Nov-2021**	26-Apr-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0861_SW090_211021	**21-Oct-2021**	**04-Nov-2021**	19-Apr-2022	✓	**04-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_QC162_211025, 0861_MW032_211025	**25-Oct-2021**	**04-Nov-2021**	23-Apr-2022	✓	**04-Nov-2021**	23-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_SW027_211026, 0861_SW011_211026, 0861_MW309_211026, 0861_MW046_211026	**26-Oct-2021**	**04-Nov-2021**	24-Apr-2022	✓	**04-Nov-2021**	24-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_SW008_211026, 0861_SW056_211026, 0861_SW033_211026, 0861_MW042_211026, 0861_MW043_211026, 0861_QC163_211026, 0861_SW059_211026, 0861_SW037_211026, 0861_SW076_211026, 0861_SW030_211026, 0861_MW047_211026, 0861_SW041_211026	**26-Oct-2021**	**05-Nov-2021**	24-Apr-2022	✓	**05-Nov-2021**	24-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_MW006_211027, 0861_MW023_211027, 0861_QC165_211027, 0861_MW007_211027, 0861_MW025_211027, 0861_MW033_211027, 0861_MW026_211027, 0861_MW037_211027, 0861_MW020_211027, 0861_MW012_211027, 0861_QC166_211027, 0861_MW005_211027	**27-Oct-2021**	**04-Nov-2021**	25-Apr-2022	✓	**04-Nov-2021**	25-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_MW050_211028, 0861_MW021_211028	**28-Oct-2021**	**04-Nov-2021**	26-Apr-2022	✓	**04-Nov-2021**	26-Apr-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0861_SW090_211021	**21-Oct-2021**	**04-Nov-2021**	19-Apr-2022	✓	**04-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_QC162_211025, 0861_MW032_211025	**25-Oct-2021**	**04-Nov-2021**	23-Apr-2022	✓	**04-Nov-2021**	23-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW027_211026, 0861_SW011_211026, 0861_MW309_211026, 0861_MW046_211026	**26-Oct-2021**	**04-Nov-2021**	24-Apr-2022	✓	**04-Nov-2021**	24-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ) 0861_SW008_211026, 0861_SW056_211026, 0861_SW033_211026, 0861_MW042_211026, 0861_MW043_211026, 0861_QC163_211026, 0861_SW059_211026, 0861_SW037_211026, 0861_SW076_211026, 0861_SW030_211026, 0861_MW047_211026, 0861_SW041_211026	**26-Oct-2021**	**05-Nov-2021**	24-Apr-2022	✓	**05-Nov-2021**	24-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW006_211027, 0861_MW023_211027, 0861_QC165_211027, 0861_MW007_211027, 0861_MW025_211027, 0861_MW033_211027, 0861_MW026_211027, 0861_MW037_211027, 0861_MW020_211027, 0861_MW012_211027, 0861_QC166_211027, 0861_MW005_211027	**27-Oct-2021**	**04-Nov-2021**	25-Apr-2022	✓	**04-Nov-2021**	25-Apr-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW050_211028, 0861_MW021_211028	**28-Oct-2021**	**04-Nov-2021**	26-Apr-2022	✓	**04-Nov-2021**	26-Apr-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_SW090_211021	**21-Oct-2021**	**04-Nov-2021**	19-Apr-2022	✓	**04-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_QC162_211025, 0861_MW032_211025	**25-Oct-2021**	**04-Nov-2021**	23-Apr-2022	✓	**04-Nov-2021**	23-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_SW027_211026, 0861_SW011_211026, 0861_MW309_211026, 0861_MW046_211026	**26-Oct-2021**	**04-Nov-2021**	24-Apr-2022	✓	**04-Nov-2021**	24-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_SW008_211026, 0861_SW056_211026, 0861_SW033_211026, 0861_MW042_211026, 0861_MW043_211026, 0861_QC163_211026, 0861_SW059_211026, 0861_SW037_211026, 0861_SW076_211026, 0861_SW030_211026, 0861_MW047_211026, 0861_SW041_211026	**26-Oct-2021**	**05-Nov-2021**	24-Apr-2022	✓	**05-Nov-2021**	24-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_MW006_211027, 0861_MW023_211027, 0861_QC165_211027, 0861_MW007_211027, 0861_MW025_211027, 0861_MW033_211027, 0861_MW026_211027, 0861_MW037_211027, 0861_MW020_211027, 0861_MW012_211027, 0861_QC166_211027, 0861_MW005_211027	**27-Oct-2021**	**04-Nov-2021**	25-Apr-2022	✓	**04-Nov-2021**	25-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_MW050_211028, 0861_MW021_211028	**28-Oct-2021**	**04-Nov-2021**	26-Apr-2022	✓	**04-Nov-2021**	26-Apr-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0861_SW090_211021	**21-Oct-2021**	**04-Nov-2021**	19-Apr-2022	✓	**04-Nov-2021**	19-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_QC162_211025, 0861_MW032_211025	**25-Oct-2021**	**04-Nov-2021**	23-Apr-2022	✓	**04-Nov-2021**	23-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_SW027_211026, 0861_SW011_211026, 0861_MW309_211026, 0861_MW046_211026	**26-Oct-2021**	**04-Nov-2021**	24-Apr-2022	✓	**04-Nov-2021**	24-Apr-2022	✓
HDPE (no PTFE) (EP231X-INJ)							
0861_SW008_211026, 0861_SW056_211026, 0861_SW033_211026, 0861_MW042_211026, 0861_MW043_211026, 0861_QC163_211026, 0861_SW059_211026, 0861_SW037_211026, 0861_SW076_211026, 0861_SW030_211026, 0861_MW047_211026, 0861_SW041_211026	**26-Oct-2021**	**05-Nov-2021**	24-Apr-2022	✓	**05-Nov-2021**	24-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_MW006_211027, 0861_MW023_211027, 0861_QC165_211027, 0861_MW007_211027, 0861_MW025_211027, 0861_MW033_211027, 0861_MW026_211027, 0861_MW037_211027, 0861_MW020_211027, 0861_MW012_211027, 0861_QC166_211027, 0861_MW005_211027	**27-Oct-2021**	**04-Nov-2021**	25-Apr-2022	✓	**04-Nov-2021**	25-Apr-2022	✓
HDPE (no PTFE) (EP231X)							
0861_MW050_211028, 0861_MW021_211028	**28-Oct-2021**	**04-Nov-2021**	26-Apr-2022	✓	**04-Nov-2021**	26-Apr-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	3	22	**13.64**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	29	**10.34**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	31	**9.68**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	31	**9.68**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	31	**9.68**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	31	**6.45**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with mobile phase solvent. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

Australian Government
Department of Industry, Innovation and Science

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: LEVEL 8
FORTITUDE VALLEY QLD 4006

Email: [redacted]

Telephone:

Fax:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: [redacted]

Address: 105 Delhi Road, North Ryde, NSW
NSW 2113

Email: [redacted]

Telephone: [redacted]

Fax:

SAMPLE DETAILS

NMI Job Name: AECO06/211029

Total No. of Samples: 16

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N21/024155	5-NOV-2021	0861_QC253_211019	WATER 19/10/2021

N21/024156	5-NOV-2021	0861_QC254_211019	SOIL 19/10/2021
N21/024157	5-NOV-2021	0861_QC255_211020	WATER 20/10/2021
N21/024158	5-NOV-2021	0861_QC256_211020	SOIL 20/10/2021
N21/024159	5-NOV-2021	0861_QC257_211021	WATER 21/10/2021
N21/024160	5-NOV-2021	0861_QC258_211021	SOIL 21/10/2021
N21/024161	5-NOV-2021	0861_QC259_211022	WATER 22/10/2021
N21/024162	5-NOV-2021	0861_QC260_211022	SOIL 22/10/2021
N21/024163	5-NOV-2021	0861_QC261_211025	WATER 25/10/2021
N21/024164	5-NOV-2021	0861_QC262_211025	WATER 25/10/2021
N21/024165	5-NOV-2021	0861_QC517_211019	SOIL19/10/2021
N21/024166	5-NOV-2021	0861_QC518_211019	WATER 19/10/2021
N21/024167	5-NOV-2021	0861_QC263_211026	WATER 26/10/2021
N21/024168	5-NOV-2021	0861_QC264_211026	SOIL26/10/2021
N21/024169	5-NOV-2021	0861_QC265_211027	WATER 27/10/2021
N21/024170	5-NOV-2021	0861_QC266_211027	WATER 27/10/2021

SAMPLE RECEIVED CONDITION

Date samples received:	29-OCT-2021
Sample received in good order:	Yes
NMI Quotation no. provided:	QLD_0861_PFASOMP
Client purchase order number:	60612563_3_1
Temperature of samples:	Chilled
Comments:	
Mode of Delivery:	Courier

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work.

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/211029
	LEVEL 8	**Quote No.**	: QT-02018
	540 WICKHAM STREET	**Order No.**	: 60612563_3_1
		Date Received	: 29-OCT-2021
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N21/024156	0861_QC254_211019	SOIL 19/10/2021
N21/024158	0861_QC256_211020	SOIL 20/10/2021
N21/024160	0861_QC258_211021	SOIL 21/10/2021
N21/024162	0861_QC260_211022	SOIL 22/10/2021

Lab Reg No.		N21/024156	N21/024158	N21/024160	N21/024162	
Date Sampled		19-OCT-2021	20-OCT-2021	21-OCT-2021	22-OCT-2021	
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFPeA (2706-90-3)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFHxA (307-24-4)	mg/kg	<0.001	<0.001	0.0012	<0.001	NR70
PFHpA (375-85-9)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFOA (335-67-1)	mg/kg	<0.001	<0.001	0.0011	<0.001	NR70
PFNA (375-95-1)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFDA (335-76-2)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFUdA (2058-94-8)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFDoA (307-55-1)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFTrDA (72629-94-8)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFTeDA (376-06-7)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFHxDA (67905-19-5)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFODA (16517-11-6)	mg/kg	<0.005	<0.005	<0.005	<0.005	NR70
FOUEA (70887-84-2)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFBS (375-73-5)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFPeS (2706-91-4)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFHxS (355-46-4)	mg/kg	0.0011	<0.001	0.0027	<0.001	NR70
PFHpS (375-92-8)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFOS (1763-23-1)	mg/kg	0.012	0.0038	0.037	<0.002	NR70
PFNS (68259-12-1)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFDS (335-77-3)	mg/kg	<0.001	<0.001	0.0020	<0.001	NR70
PFOSA (754-91-6)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
N-MeFOSA (31506-32-8)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
N-EtFOSA (4151-50-2)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
N-MeFOSAA (2355-31-9)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
N-EtFOSAA(2991-50-6)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
N-MeFOSE (24448-09-7)	mg/kg	<0.005	<0.005	<0.005	<0.005	NR70

REPORT OF ANALYSIS

Lab Reg No.		N21/024156	N21/024158	N21/024160	N21/024162	
Date Sampled		19-OCT-2021	20-OCT-2021	21-OCT-2021	22-OCT-2021	
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
N-EtFOSE (1691-99-2)	mg/kg	<0.005	<0.005	<0.005	<0.005	NR70
4:2 FTS (757124-72-4)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
6:2 FTS (27619-97-2)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
8:2 FTS (39108-34-4)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
10:2 FTS (120226-60-0)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
8:2 diPAP (678-41-1)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFBA (Surrogate Recovery)	%	107	101	100	103	NR70
PFPeA (Surrogate Recovery)	%	109	140	103	109	NR70
PFHxA (Surrogate Recovery)	%	114	133	113	108	NR70
PFHpA (Surrogate Recovery)	%	104	124	105	101	NR70
PFOA (Surrogate Recovery)	%	102	96	105	101	NR70
PFNA (Surrogate Recovery)	%	99	117	112	129	NR70
PFDA (Surrogate Recovery)	%	102	86	123	103	NR70
PFUdA (Surrogate Recovery)	%	114	108	102	113	NR70
PFDoA (Surrogate Recovery)	%	67	53	123	100	NR70
PFTeDA (Surrogate Recovery)	%	98	106	116	135	NR70
PFHxDA (Surrogate Recovery)	%	82	57	98	121	NR70
FOUEA (Surrogate Recovery)	%	85	50	31	66	NR70
PFBS (Surrogate Recovery)	%	101	128	95	95	NR70
PFHxS (Surrogate Recovery)	%	101	133	110	107	NR70
PFOS (Surrogate Recovery)	%	115	101	95	100	NR70
PFOSA (Surrogate Recovery)	%	87	80	96	107	NR70
N-MeFOSA (Surrogate Recovery)	%	96	74	94	90	NR70
N-EtFOSA (Surrogate Recovery)	%	95	72	101	95	NR70
N-MeFOSAA (Surrogate Recovery)	%	91	74	113	112	NR70
N-EtFOSAA (Surrogate Recovery)	%	107	93	127	125	NR70
N-MeFOSE (Surrogate Recovery)	%	81	98	94	57	NR70
N-EtFOSE (Surrogate Recovery)	%	92	84	80	78	NR70
4:2 FTS (Surrogate Recovery)	%	108	176	101	115	NR70
6:2 FTS (Surrogate Recovery)	%	95	118	108	105	NR70
8:2 FTS (Surrogate Recovery)	%	97	145	141	98	NR70
8:2 diPAP (Surrogate Recovery)	%	101	66	111	110	NR70
Dates						
Date extracted		1-NOV-2021	1-NOV-2021	1-NOV-2021	1-NOV-2021	
Date analysed		9-NOV-2021	9-NOV-2021	9-NOV-2021	9-NOV-2021	

N21/024156
to
N21/024168

REPORT OF ANALYSIS

PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
High PFAS surrogate recoveries accepted - results corrected for recovery.
Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

[redacted] Analyst
Organics - NSW
Accreditation No. 198

11-NOV-2021

Lab Reg No.		**N21/024156**	**N21/024158**	**N21/024160**	**N21/024162**	
Date Sampled		**19-OCT-2021**	**20-OCT-2021**	**21-OCT-2021**	**22-OCT-2021**	
	Units					**Method**
Trace Elements						
Total Solids	%	63.1	52.5	80.5	62.8	NT2_49
Dates						
Date extracted		2-NOV-2021	2-NOV-2021	2-NOV-2021	2-NOV-2021	
Date analysed		2-NOV-2021	2-NOV-2021	2-NOV-2021	2-NOV-2021	

[redacted] Analyst
Inorganics - NSW
Accreditation No. 198

11-NOV-2021

REPORT OF ANALYSIS

Report No. RN1333717

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/211029
	LEVEL 8	**Quote No.**	: QT-02018
	540 WICKHAM STREET	**Order No.**	: 60612563_3_1
		Date Received	: 29-OCT-2021
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N21/024165	0861_QC517_211019	SOIL19/10/2021
N21/024168	0861_QC264_211026	SOIL26/10/2021

Lab Reg No.		N21/024165	N21/024168			
Date Sampled		19-OCT-2021	26-OCT-2021			
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	mg/kg	<0.002	<0.002			NR70
PFPeA (2706-90-3)	mg/kg	<0.002	0.0050			NR70
PFHxA (307-24-4)	mg/kg	<0.001	0.0046			NR70
PFHpA (375-85-9)	mg/kg	<0.001	0.0013			NR70
PFOA (335-67-1)	mg/kg	<0.001	0.0024			NR70
PFNA (375-95-1)	mg/kg	<0.001	0.0030			NR70
PFDA (335-76-2)	mg/kg	<0.001	0.0033			NR70
PFUdA (2058-94-8)	mg/kg	<0.002	0.0069			NR70
PFDoA (307-55-1)	mg/kg	<0.002	0.0058			NR70
PFTrDA (72629-94-8)	mg/kg	<0.002	0.0038			NR70
PFTeDA (376-06-7)	mg/kg	<0.002	<0.002			NR70
PFHxDA (67905-19-5)	mg/kg	<0.002	<0.002			NR70
PFODA (16517-11-6)	mg/kg	<0.005	<0.005			NR70
FOUEA (70887-84-2)	mg/kg	<0.001	<0.001			NR70
PFBS (375-73-5)	mg/kg	<0.001	0.0011			NR70
PFPeS (2706-91-4)	mg/kg	<0.001	0.0014			NR70
PFHxS (355-46-4)	mg/kg	<0.001	0.014			NR70
PFHpS (375-92-8)	mg/kg	<0.001	0.0013			NR70
PFOS (1763-23-1)	mg/kg	<0.002	0.16			NR70
PFNS (68259-12-1)	mg/kg	<0.001	<0.001			NR70
PFDS (335-77-3)	mg/kg	<0.001	<0.001			NR70
PFOSA (754-91-6)	mg/kg	<0.001	<0.001			NR70
N-MeFOSA (31506-32-8)	mg/kg	<0.002	<0.002			NR70
N-EtFOSA (4151-50-2)	mg/kg	<0.002	<0.002			NR70
N-MeFOSAA (2355-31-9)	mg/kg	<0.002	<0.002			NR70
N-EtFOSAA(2991-50-6)	mg/kg	<0.002	<0.002			NR70
N-MeFOSE (24448-09-7)	mg/kg	<0.005	<0.005			NR70
N-EtFOSE (1691-99-2)	mg/kg	<0.005	<0.005			NR70
4:2 FTS (757124-72-4)	mg/kg	<0.001	<0.001			NR70

REPORT OF ANALYSIS

Lab Reg No.		N21/024165	N21/024168			
Date Sampled		19-OCT-2021	26-OCT-2021			
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
6:2 FTS (27619-97-2)	mg/kg	<0.001	0.0024			NR70
8:2 FTS (39108-34-4)	mg/kg	<0.001	0.0017			NR70
10:2 FTS (120226-60-0)	mg/kg	<0.002	<0.002			NR70
8:2 diPAP (678-41-1)	mg/kg	<0.002	<0.002			NR70
PFBA (Surrogate Recovery)	%	106	102			NR70
PFPeA (Surrogate Recovery)	%	116	104			NR70
PFHxA (Surrogate Recovery)	%	118	109			NR70
PFHpA (Surrogate Recovery)	%	110	104			NR70
PFOA (Surrogate Recovery)	%	108	103			NR70
PFNA (Surrogate Recovery)	%	138	106			NR70
PFDA (Surrogate Recovery)	%	124	96			NR70
PFUdA (Surrogate Recovery)	%	166	129			NR70
PFDoA (Surrogate Recovery)	%	110	81			NR70
PFTeDA (Surrogate Recovery)	%	132	55			NR70
PFHxDA (Surrogate Recovery)	%	135	70			NR70
FOUEA (Surrogate Recovery)	%	21	59			NR70
PFBS (Surrogate Recovery)	%	104	111			NR70
PFHxS (Surrogate Recovery)	%	113	114			NR70
PFOS (Surrogate Recovery)	%	103	114			NR70
PFOSA (Surrogate Recovery)	%	118	85			NR70
N-MeFOSA (Surrogate Recovery)	%	101	82			NR70
N-EtFOSA (Surrogate Recovery)	%	103	85			NR70
N-MeFOSAA (Surrogate Recovery)	%	130	88			NR70
N-EtFOSAA (Surrogate Recovery)	%	122	117			NR70
N-MeFOSE (Surrogate Recovery)	%	98	94			NR70
N-EtFOSE (Surrogate Recovery)	%	116	96			NR70
4:2 FTS (Surrogate Recovery)	%	96	162			NR70
6:2 FTS (Surrogate Recovery)	%	99	144			NR70
8:2 FTS (Surrogate Recovery)	%	110	176			NR70
8:2 diPAP (Surrogate Recovery)	%	129	95			NR70
Dates						
Date extracted		1-NOV-2021	1-NOV-2021			
Date analysed		9-NOV-2021	9-NOV-2021			

[redacted]

[redacted] Analyst
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Accreditation No. 198

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REPORT OF ANALYSIS

Lab Reg No.		N21/024165	N21/024168			
Date Sampled		19-OCT-2021	26-OCT-2021			
	Units					Method
Trace Elements						
Total Solids	%	99.9	41.4			NT2_49
Dates						
Date extracted		2-NOV-2021	2-NOV-2021			
Date analysed		2-NOV-2021	2-NOV-2021			

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All results are expressed on a dry weight basis.

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/211029
	LEVEL 8	**Quote No.**	: QT-02018
	540 WICKHAM STREET	**Order No.**	: 60612563_3_1
		Date Received	: 29-OCT-2021
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N21/024155	0861_QC253_211019	WATER 19/10/2021
N21/024157	0861_QC255_211020	WATER 20/10/2021
N21/024159	0861_QC257_211021	WATER 21/10/2021
N21/024161	0861_QC259_211022	WATER 22/10/2021

Lab Reg No.			N21/024155	N21/024157	N21/024159	N21/024161	
Date Sampled			19-OCT-2021	20-OCT-2021	21-OCT-2021	22-OCT-2021	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	0.052	<0.05	<0.05	<0.05	NR70
PFPeA (2706-90-3)		ug/L	0.022	<0.02	<0.02	<0.02	NR70
PFHxA (307-24-4)		ug/L	0.033	<0.01	<0.01	<0.01	NR70
PFHpA (375-85-9)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFOA (335-67-1)		ug/L	0.010	<0.01	<0.01	<0.01	NR70
PFNA (375-95-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDA (335-76-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFPeS (2706-91-4)		ug/L	0.028	<0.01	<0.01	<0.01	NR70
PFHxS (355-46-4)		ug/L	0.24	<0.01	<0.01	<0.01	NR70
PFHpS (375-92-8)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFOS (1763-23-1)		ug/L	0.55	<0.02	<0.02	<0.02	NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFBS (375-73-5)		ug/L	0.048	<0.01	<0.01	<0.01	NR70
PFOSA (754-91-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70

REPORT OF ANALYSIS

Lab Reg No.			N21/024155	N21/024157	N21/024159	N21/024161	
Date Sampled			19-OCT-2021	20-OCT-2021	21-OCT-2021	22-OCT-2021	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 FTS (39108-34-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)		%	89	93	89	96	NR70
PFPeA (Surrogate Recovery)		%	129	116	121	121	NR70
PFHxA (Surrogate Recovery)		%	89	91	100	103	NR70
PFHpA (Surrogate Recovery)		%	88	90	94	97	NR70
PFOA (Surrogate Recovery)		%	86	91	93	90	NR70
PFNA (Surrogate Recovery)		%	79	91	98	101	NR70
PFDA (Surrogate Recovery)		%	94	95	96	94	NR70
PFUdA (Surrogate Recovery)		%	82	104	101	80	NR70
PFDoA (Surrogate Recovery)		%	66	82	90	66	NR70
PFTeDA (Surrogate Recovery)		%	75	89	114	54	NR70
PFHxDA (Surrogate Recovery)		%	77	76	92	61	NR70
FOUEA (Surrogate Recovery)		%	72	69	78	75	NR70
PFBS (Surrogate Recovery)		%	84	85	88	94	NR70
PFHxS (Surrogate Recovery)		%	94	87	97	99	NR70
PFOS (Surrogate Recovery)		%	78	80	87	91	NR70
PFOSA (Surrogate Recovery)		%	62	71	81	70	NR70
N-MeFOSA (Surrogate Recovery)		%	42	47	63	51	NR70
N-EtFOSA (Surrogate Recovery)		%	42	45	67	47	NR70
N-MeFOSAA (Surrogate Recovery)		%	85	80	88	72	NR70
N-EtFOSAA (Surrogate Recovery)		%	78	68	82	79	NR70
N-MeFOSE (Surrogate Recovery)		%	48	52	56	47	NR70
N-EtFOSE (Surrogate Recovery)		%	58	49	85	46	NR70
4:2 FTS (Surrogate Recovery)		%	138	124	83	143	NR70
6:2 FTS (Surrogate Recovery)		%	121	93	83	93	NR70
8:2 FTS (Surrogate Recovery)		%	93	111	82	94	NR70
8:2 diPAP (Surrogate Recovery)		%	89	87	89	84	NR70
Dates							
Date extracted			2-NOV-2021	2-NOV-2021	2-NOV-2021	2-NOV-2021	
Date analysed			9-NOV-2021	9-NOV-2021	9-NOV-2021	9-NOV-2021	

N21/024155
to
N21/024170

PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

[redacted], Analyst
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REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/211029
	LEVEL 8	**Quote No.**	: QT-02018
	540 WICKHAM STREET	**Order No.**	: 60612563_3_1
		Date Received	: 29-OCT-2021
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N21/024163	0861_QC261_211025	WATER 25/10/2021
N21/024164	0861_QC262_211025	WATER 25/10/2021
N21/024166	0861_QC518_211019	WATER 19/10/2021
N21/024167	0861_QC263_211026	WATER 26/10/2021

Lab Reg No.			N21/024163	N21/024164	N21/024166	N21/024167	
Date Sampled			25-OCT-2021	25-OCT-2021	19-OCT-2021	26-OCT-2021	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	0.15	0.60	<0.05	<0.05	NR70
PFPeA (2706-90-3)		ug/L	0.21	0.73	<0.02	<0.02	NR70
PFHxA (307-24-4)		ug/L	0.17	3.2	<0.01	<0.01	NR70
PFHpA (375-85-9)		ug/L	0.064	0.73	<0.01	<0.01	NR70
PFOA (335-67-1)		ug/L	0.048	1.6	<0.01	<0.01	NR70
PFNA (375-95-1)		ug/L	0.017	0.062	<0.01	<0.01	NR70
PFDA (335-76-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFPeS (2706-91-4)		ug/L	0.039	1.4	<0.01	<0.01	NR70
PFHxS (355-46-4)		ug/L	0.35	8.4	<0.01	0.028	NR70
PFHpS (375-92-8)		ug/L	0.010	0.68	<0.01	<0.01	NR70
PFOS (1763-23-1)		ug/L	0.60	18	<0.02	0.040	NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFBS (375-73-5)		ug/L	0.055	1.5	<0.01	0.012	NR70
PFOSA (754-91-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70

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Lab Reg No.		Units	N21/024163	N21/024164	N21/024166	N21/024167	Method
Date Sampled			25-OCT-2021	25-OCT-2021	19-OCT-2021	26-OCT-2021	
PFAS (per-and poly-fluoroalkyl substances)							
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)		ug/L	0.044	0.11	<0.01	<0.01	NR70
8:2 FTS (39108-34-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)		%	90	86	94	90	NR70
PFPeA (Surrogate Recovery)		%	111	100	88	128	NR70
PFHxA (Surrogate Recovery)		%	95	87	101	101	NR70
PFHpA (Surrogate Recovery)		%	94	96	94	90	NR70
PFOA (Surrogate Recovery)		%	90	79	97	89	NR70
PFNA (Surrogate Recovery)		%	80	74	109	106	NR70
PFDA (Surrogate Recovery)		%	86	88	85	87	NR70
PFUdA (Surrogate Recovery)		%	91	80	110	96	NR70
PFDoA (Surrogate Recovery)		%	54	66	85	74	NR70
PFTeDA (Surrogate Recovery)		%	63	71	62	89	NR70
PFHxDA (Surrogate Recovery)		%	83	118	71	79	NR70
FOUEA (Surrogate Recovery)		%	74	80	79	77	NR70
PFBS (Surrogate Recovery)		%	93	80	93	88	NR70
PFHxS (Surrogate Recovery)		%	90	87	96	98	NR70
PFOS (Surrogate Recovery)		%	90	90	100	88	NR70
PFOSA (Surrogate Recovery)		%	60	68	86	72	NR70
N-MeFOSA (Surrogate Recovery)		%	49	64	54	44	NR70
N-EtFOSA (Surrogate Recovery)		%	47	66	58	51	NR70
N-MeFOSAA (Surrogate Recovery)		%	76	80	91	82	NR70
N-EtFOSAA (Surrogate Recovery)		%	71	79	94	79	NR70
N-MeFOSE (Surrogate Recovery)		%	64	53	59	65	NR70
N-EtFOSE (Surrogate Recovery)		%	54	57	75	52	NR70
4:2 FTS (Surrogate Recovery)		%	150	86	102	110	NR70
6:2 FTS (Surrogate Recovery)		%	101	71	93	83	NR70
8:2 FTS (Surrogate Recovery)		%	94	69	108	73	NR70
8:2 diPAP (Surrogate Recovery)		%	72	88	109	84	NR70
Dates							
Date extracted			2-NOV-2021	2-NOV-2021	2-NOV-2021	2-NOV-2021	
Date analysed			9-NOV-2021	9-NOV-2021	9-NOV-2021	9-NOV-2021	

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Lab Reg No.			N21/024163	N21/024164	N21/024166	N21/024167	
Date Sampled			25-OCT-2021	25-OCT-2021	19-OCT-2021	26-OCT-2021	
		Units					Method

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Accreditation No. 198

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REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/211029
	LEVEL 8	**Quote No.**	: QT-02018
	540 WICKHAM STREET	**Order No.**	: 60612563_3_1
		Date Received	: 29-OCT-2021
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N21/024169	0861_QC265_211027	WATER 27/10/2021
N21/024170	0861_QC266_211027	WATER 27/10/2021

Lab Reg No.			N21/024169	N21/024170			
Date Sampled			27-OCT-2021	27-OCT-2021			
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	0.45	<0.05			NR70
PFPeA (2706-90-3)		ug/L	0.63	<0.02			NR70
PFHxA (307-24-4)		ug/L	2.3	<0.01			NR70
PFHpA (375-85-9)		ug/L	0.39	<0.01			NR70
PFOA (335-67-1)		ug/L	0.85	<0.01			NR70
PFNA (375-95-1)		ug/L	<0.01	<0.01			NR70
PFDA (335-76-2)		ug/L	<0.01	<0.01			NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01			NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01			NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02			NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02			NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02			NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05			NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01			NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01			NR70
PFPeS (2706-91-4)		ug/L	1.7	<0.01			NR70
PFHxS (355-46-4)		ug/L	13	<0.01			NR70
PFHpS (375-92-8)		ug/L	0.96	<0.01			NR70
PFOS (1763-23-1)		ug/L	19	0.024			NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01			NR70
PFBS (375-73-5)		ug/L	1.6	<0.01			NR70
PFOSA (754-91-6)		ug/L	0.13	<0.01			NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02			NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02			NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01			NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01			NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05			NR70
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05			NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01			NR70

REPORT OF ANALYSIS

Lab Reg No.			N21/024169	N21/024170			
Date Sampled			27-OCT-2021	27-OCT-2021			
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
6:2 FTS (27619-97-2)		ug/L	0.085	<0.01			NR70
8:2 FTS (39108-34-4)		ug/L	<0.01	<0.01			NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01			NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02			NR70
PFBA (Surrogate Recovery)		%	94	92			NR70
PFPeA (Surrogate Recovery)		%	89	98			NR70
PFHxA (Surrogate Recovery)		%	97	103			NR70
PFHpA (Surrogate Recovery)		%	102	94			NR70
PFOA (Surrogate Recovery)		%	94	95			NR70
PFNA (Surrogate Recovery)		%	71	106			NR70
PFDA (Surrogate Recovery)		%	79	104			NR70
PFUdA (Surrogate Recovery)		%	85	108			NR70
PFDoA (Surrogate Recovery)		%	77	72			NR70
PFTeDA (Surrogate Recovery)		%	101	111			NR70
PFHxDA (Surrogate Recovery)		%	73	67			NR70
FOUEA (Surrogate Recovery)		%	80	80			NR70
PFBS (Surrogate Recovery)		%	91	91			NR70
PFHxS (Surrogate Recovery)		%	89	94			NR70
PFOS (Surrogate Recovery)		%	95	96			NR70
PFOSA (Surrogate Recovery)		%	71	81			NR70
N-MeFOSA (Surrogate Recovery)		%	66	63			NR70
N-EtFOSA (Surrogate Recovery)		%	68	63			NR70
N-MeFOSAA (Surrogate Recovery)		%	78	83			NR70
N-EtFOSAA (Surrogate Recovery)		%	78	84			NR70
N-MeFOSE (Surrogate Recovery)		%	57	76			NR70
N-EtFOSE (Surrogate Recovery)		%	68	62			NR70
4:2 FTS (Surrogate Recovery)		%	86	71			NR70
6:2 FTS (Surrogate Recovery)		%	87	67			NR70
8:2 FTS (Surrogate Recovery)		%	76	80			NR70
8:2 diPAP (Surrogate Recovery)		%	91	78			NR70
Dates							
Date extracted			2-NOV-2021	2-NOV-2021			
Date analysed			9-NOV-2021	9-NOV-2021			

[redacted]

[redacted], Analyst
Organics - NSW
Accreditation No. 198

11-NOV-2021

REPORT OF ANALYSIS

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

This Report supersedes reports: *RN1333711*

Measurement Uncertainty is available upon request.
Chemical Accreditation 198: 105 Delhi Road, North Ryde, NSW, 2113

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/211029 **Sample Matrix:** Solid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		mg/kg	mg/kg	mg/kg	mg/kg	%	%	%
				N21/024168				
PFBA (375-22-4)	NR70	0.002	<0.002	<0.002	0.0022	-	113	NA
PFPeA (2706-90-3)	NR70	0.002	<0.002	0.0050	0.0060	18	109	NA
PFHxA (307-24-4)	NR70	0.001	<0.001	0.0046	0.0041	11	101	NA
PFHpA (375-85-9)	NR70	0.001	<0.001	0.0013	0.0013	0	103	NA
PFOA (335-67-1)	NR70	0.001	<0.001	0.0024	0.0026	8.0	91	NA
PFNA (375-95-1)	NR70	0.001	<0.001	0.0030	0.0031	3.0	90	NA
PFDA (335-76-2)	NR70	0.001	<0.001	0.0033	0.0028	16	88	NA
PFUdA (2058-94-8)	NR70	0.002	<0.002	0.0069	0.0077	11	87	NA
PFDoA (307-55-1)	NR70	0.002	<0.002	0.0058	0.007	19	121	NA
PFTrDA (72629-94-8)	NR70	0.002	<0.002	0.0038	0.0026	38	58	NA
PFTeDA (376-06-7)	NR70	0.002	<0.002	<0.002	<0.002	-	110	NA
PFHxDA (67905-19-5)	NR70	0.002	<0.002	<0.002	<0.002	-	122	NA
PFODA (16517-11-6)	NR70	0.005	<0.005	<0.005	<0.005	-	98	NA
FOUEA (70887-84-2)	NR70	0.001	<0.001	<0.001	<0.001	-	101	NA
PFBS (375-73-5)	NR70	0.001	<0.001	0.0011	0.0012	9.0	98	NA
PFPeS (2706-91-4)	NR70	0.001	<0.001	0.0014	0.0014	0	108	NA
PFHxS (355-46-4)	NR70	0.001	<0.001	0.014	0.015	7.0	111	NA
PFHpS (375-92-8)	NR70	0.001	<0.001	0.0013	0.0012	8.0	105	NA
PFOS (1763-23-1)	NR70	0.002	<0.002	0.16	0.16	0	117	NA
PFNS (68259-12-1)	NR70	0.001	<0.001	<0.001	<0.001	-	106	NA
PFDS (335-77-3)	NR70	0.001	<0.001	<0.001	<0.001	-	104	NA
PFOSA (754-91-6)	NR70	0.001	<0.001	<0.001	<0.001	-	98	NA
N-MeFOSA (31506-32-8)	NR70	0.002	<0.002	<0.002	<0.002	-	102	NA
N-EtFOSA (4151-50-2)	NR70	0.002	<0.002	<0.002	<0.002	-	103	NA
N-MeFOSAA (2355-31-9)	NR70	0.002	<0.002	<0.002	<0.002	-	106	NA
N-EtFOSAA(2991-50-6)	NR70	0.002	<0.002	<0.002	<0.002	-	109	NA
N-MeFOSE (24448-09-7)	NR70	0.005	<0.005	<0.005	<0.005	-	76	NA
N-EtFOSE (1691-99-2)	NR70	0.005	<0.005	<0.005	<0.005	-	67	NA
4:2 FTS (757124-72-4)	NR70	0.001	<0.001	<0.001	<0.001	-	98	NA
6:2 FTS (27619-97-2)	NR70	0.001	<0.001	0.0024	0.0019	23	92	NA
8:2 FTS (39108-34-4)	NR70	0.001	<0.001	0.0017	0.0020	16	94	NA
10:2 FTS (120226-60-0)	NR70	0.002	<0.002	<0.002	<0.002	-	84	NA
8:2 diPAP (678-41-1)	NR70	0.002	<0.002	<0.002	<0.002	-	97	NA

Results expressed in percentage (%) or mg/kg wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

[redacted]
Organics Manager, NMI-North Ryde

Date: **10/11/2021**

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/211029 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
				N21/024157				
PFBA (375-22-4)	NR70	0.05	<0.05	<0.05	<0.05	-	115	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	<0.02	<0.02	-	118	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	<0.01	<0.01	-	98	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	<0.01	<0.01	-	95	NA
PFOA (335-67-1)	NR70	0.01	<0.01	<0.01	<0.01	-	89	NA
PFNA (375-95-1)	NR70	0.01	<0.01	<0.01	<0.01	-	100	NA
PFDA (335-76-2)	NR70	0.01	<0.01	<0.01	<0.01	-	105	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	<0.01	<0.01	-	118	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	<0.01	<0.01	-	120	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	<0.02	<0.02	-	105	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	<0.02	<0.02	-	82	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	<0.02	<0.02	-	136	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	<0.05	<0.05	-	109	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	<0.01	<0.01	-	107	NA
PFBS (375-73-5)	NR70	0.01	<0.01	<0.01	<0.01	-	90	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	<0.01	<0.01	-	106	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	<0.01	<0.01	-	109	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	<0.01	<0.01	-	112	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	<0.02	<0.02	-	109	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	<0.01	<0.01	-	124	NA
PFDS (335-77-3)	NR70	0.01	<0.01	<0.01	<0.01	-	117	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	<0.01	<0.01	-	104	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	<0.02	<0.02	-	96	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	<0.02	<0.02	-	113	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	<0.01	<0.01	-	102	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	<0.01	<0.01	-	99	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	<0.05	<0.05	-	61	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	<0.05	<0.05	-	109	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	<0.01	<0.01	-	118	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	<0.01	<0.01	-	107	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	<0.01	<0.01	-	118	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	<0.01	<0.01	-	84	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	<0.02	<0.02	-	87	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

[redacted]
Organics Manager, NMI-North Ryde

Date: **11/11/2021**

Appendix F

Equipment Calibration Certificates

Appendix F Equipment Calibration Certificates

Oil / Water Interface Meter

Instrument Interface Meter (60M)
Serial No. 312447

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: [redacted]

Calibration date: 21/09/2021

Next calibration due: 20/11/2021

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 18J104327

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.00		372012	pH 6.99
2. pH 4.00		pH 4.00		372374	pH 3.99
3. ORP		233.6mV		364644/363903	234.0 mV
4. EC		2760uS		369734	2634uS
6. D.O		0%		11171	0.00%
7. Temp		23.2oC		MultiTherm 09000528	22.6oC

Calibrated by: [redacted]

Calibration date: 12/10/2021

Next calibration due: 11/11/2021

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	Amberley OMP	**Project Number:**	60612563 3.1
Project Location:		**Client:**	DoD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Aquaread
Make and Model:	YSI Pro plus.
Serial Number:	18J104327

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	~~ppm~~ mV
Calibration Standard Concentration:	4	7.01	2760	0	233.4
Bump Test Reading:	4.04	7.04	2773	0.01	230.8
Bump Test Temperature:	23.8	23.9	23.7	23.6	23.9

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — Fieldwork Staff Signature

28/10/21 — Date

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	Amberley OMP	**Project Number:**	60612563 3.1
Project Location:		**Client:**	DoD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Aimer
Make and Model:	YSI Proplus
Serial Number:	18J104327

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	27/10/21 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	~~ppm~~ mV
Calibration Standard Concentration:	4.0	7.01	2760	0	235.9
Bump Test Reading:	4.03	7.00	2758	0.01	238.3
Bump Test Temperature:	22.0	22.1	21.9	22.1	22.0

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]
Fieldwork Staff Signature

27/10/21
Date

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	Amberley OMP	**Project Number:**	60612563 3.1
Project Location:	AmB	**Client:**	DoD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Aimex
Make and Model:	YSI Pro plus
Serial Number:	18J104327

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	26/10/21 0815				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	~~ppm~~ mV
Calibration Standard Concentration:	4.0	7.01	2760	0	236.9
Bump Test Reading:	4.03	7.02	2742	0.01	236.1
Bump Test Temperature:	20.9	21.1	20.9	21.2	21.2

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]

Fieldwork Staff Signature

26/10/21

Date

Distribution: Project Central File

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	Amberley OMP	**Project Number:**	60612563 3.1
Project Location:		**Client:**	DoD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Airmet
Make and Model:	YSI Pro plus
Serial Number:	18J104327

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	25/10/21 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	4.0	7.01			
Calibration Reading:	4.01	7.01			
Calibration Temperature:	24.3	24.3			

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	25/10/21 2800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	~~ppm~~ mV
Calibration Standard Concentration:	4.00	7.00	2760	0	232.8
Bump Test Reading:	3.91	6.94	2732	0.02	251.4
Bump Test Temperature:	24.3	24.3	24.3	24.4	24.4

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — Fieldwork Staff Signature

25/10/21 — Date

Distribution: Project Central File

[redacted]

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	Amberley OMP	**Project Number:**	60612563 3.1
Project Location:		**Client:**	DoD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Aquaread
Make and Model:	AP-7S Pro plus
Serial Number:	18J104327

CALIBRATION

Bump

~~CALIBRATE~~ WITH CALIBRATION SOLUTIONS

Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Date and Time:	22/10/21 0700				
Units	pH	pH	µS/cm	ppm	~~ppm~~ mV
Calibration Standard Concentration:	4	7.01	2760	0	238.4
Calibration Reading:	3.99	7.02	2739	0.02	238.5
Calibration Temperature:	20.2	20.2	20.2	20.3	~~20~~ 20.2°C

ONGOING CHECKS

Cal

~~BUMP~~ TEST WITH CALIBRATION SOLUTION

Parameter	Acidity		Conductivity	Dissolved Oxygen	
Date and Time:					
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	4				
Bump Test Reading:	3.93				
Bump Test Temperature:	20.2				

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]
Fieldwork Staff Signature

22/10/21
Date

Distribution: Project Central File

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	Amberley OMP	**Project Number:**	60612563 3.1
Project Location:		**Client:**	DoD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Aquaread
Make and Model:	451 Pro Plus
Serial Number:	18J104327

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	21/10/21 0700				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	~~ppm~~ mV
Calibration Standard Concentration:	4.0	7.01	2760	0.0	240.4
Calibration Reading:	3.97	7.04	2743	0.03	241.7
Calibration Temperature:	18.4	18.4	18.5	18.5	18.5

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	~~ppm~~ mV
Calibration Standard Concentration:					
Bump Test Reading:					
Bump Test Temperature:					

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — Fieldwork Staff Signature

21/10/21 — Date

Distribution: Project Central File

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	Amberley OMP	**Project Number:**	60612563 3.1
Project Location:	Amberley Base	**Client:**	DoD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Airmet
Make and Model:	YSI PRO PLUS
Serial Number:	18S104327

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	20/10/21 8:30				
Parameter	Acidity		Conductivity	ORP	Dissolved Oxygen
Units	pH	pH	µS/cm	mV ~~ppm~~	~~ppm~~ %
Calibration Standard Concentration:	4	7	2496	237.8	0.0
Calibration Reading:	4.00	7.02	2500	237.6	-0.1
Calibration Temperature:	20.5	20.5	20.4	20.7	20.7

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	ORP	Dissolved Oxygen
Units	pH	pH	µS/cm	mV ~~ppm~~	✓ ~~ppm~~ %
Calibration Standard Concentration:	4	7.02	2496	237.8	0.0
Bump Test Reading:	3.74	7.09	2762	241.9	0.3
Bump Test Temperature:	20.5	20.5	20.4	20.7	20.7

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]

Fieldwork Staff Signature

20/10/21

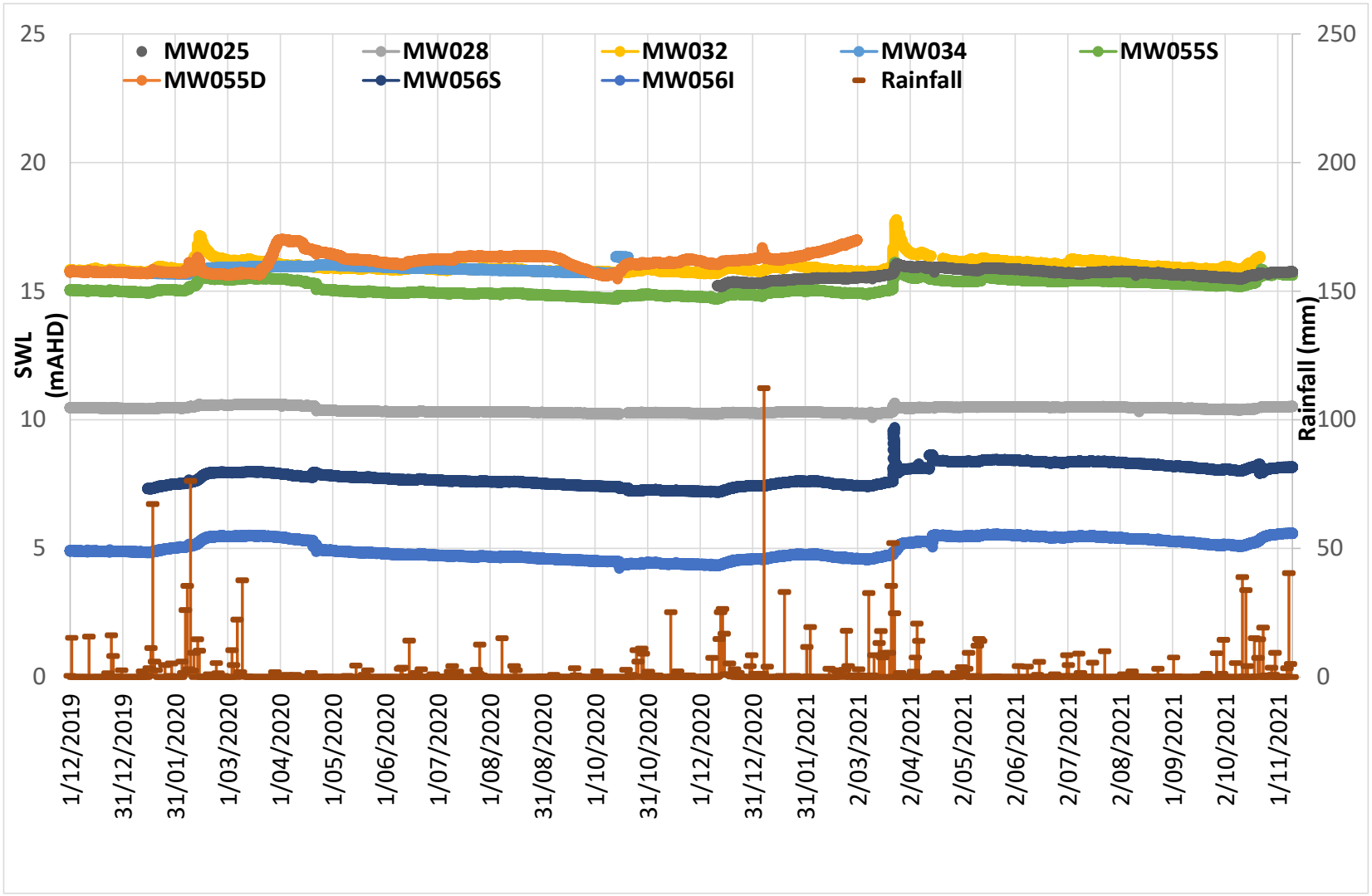
Date

Distribution: Project Central File

Appendix G

Groundwater Level Data

Appendix G Groundwater Level Data


MW025
MW028
MW032
MW034
MW055S
MW055D
MW056S
MW056I
Rainfall
SWL (mAHD)
Rainfall (mm)
25
20
15
10
5
0
250
200
150
100
50
0
1/12/2019
31/12/2019
31/01/2020
1/03/2020
1/04/2020
1/05/2020
1/06/2020
1/07/2020
1/08/2020
31/08/2020
1/10/2020
31/10/2020
1/12/2020
31/12/2020
31/01/2021
2/03/2021
2/04/2021
2/05/2021
2/06/2021
2/07/2021
2/08/2021
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AECOM

Sampling Event Factual Report, March/April 2022

PFAS OMP - RAAF Base Amberley

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PFAS OMP - RAAF Base Amberley

Client: Department of Defence

ABN: 68706814312

Prepared by

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Abbreviations

Abbreviation	
ALS	Australian Laboratory Services
ASC NEPM	Assessment of Site Contamination National Environment Protection Measure 1999 (as amended 2013)
COC	Chain of custody
CPSA	Confirmed primary source area
DCMM	Defence Contamination Management Manual
Defence	Department of Defence
DO	Dissolved oxygen
EC	Electrical conductivity
FTA	Firefighting training area
HEPA	Heads of Environmental Protection Agencies
IP	Interface probe
LNAPL	Light non aqueous phase liquid
LOR	Limit of reporting
mAHD	metres Australian height datum
mbtoc	Metres below top of casing
NATA	National Association of Testing Authorities
NEMP	National Environmental Management Plan
NHMRC	National Health and Medical Research Council
NMI	National Measurement Institute
OMP	Ongoing management plan
ORP	Oxidation reduction potential
PFAS	Per- and poly-fluorinated alkyl substances
PFHxS	Perfluorohexane sulfonate
PFOA	Perflurooctanoic acid
PFOS	Perflurooctanesulfonic acid
PMAP	PFAS management area plan
QA/QC	Quality assurance / quality control
RAAF	Royal Australian Air Force
QLD	Queensland
RPD	Relative percent difference
SAQP	Sampling analysis and quality plan
SWL	Standing water level

Units of Measurement			
L	Litres	m	Metre
mg	Milligram	ha	Hectares
kg	Kilogram	S	Siemens
mV	Millivolts	cm	Centimetre
µg	Microgram		

1.0 Introduction

1.1 General

AECOM Australia Pty Ltd (AECOM) has been engaged by the Department of Defence (Defence) to implement the per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Program (OMP) (Defence, 2020) at the Royal Australian Airforce (RAAF) Base Amberley (the 'Site') and the Management Area in the South Queensland Region. The locations of the Site and Management Area are shown on **Figure 1** in **Appendix A**.

The OMP for RAAF Base Amberley (Defence, 2020) includes the following sampling events:

- Biannual groundwater, surface water and sediment sampling in April and October in 2020, 2021, and 2022.

Following each biannual sampling event, sampling event factual reports will be prepared. Annual interpretative reports will be prepared following the completion of each 12-month sampling period. This sampling event factual report has been prepared to report the results of the biannual sampling event completed in March / April 2022, specifically highlighting first time detections and/or first-time exceedances of human health screening criteria for PFHxS+PFOS and / or PFOA.

This report has been prepared in accordance with the *PFAS OMP Factual Reports Guidance,* v 0.2, May 2021 (Defence, 2021).

1.2 Objectives

The objectives of the OMP are to:

- Implement the OMP prepared as part of the PFAS Management Area Plan (PMAP); and
- Collect data that will enable Defence to maintain an up to date understanding of the distribution, concentration and transport of PFAS at each property.

The data will assist in the timely identification of risks and inform Defence's approach to the management of PFAS, including updates and revisions to the PMAP.

The objective of this phase of works was to implement the scope of works for the March/April 2022 sampling event in accordance with the sampling analysis and quality plan (SAQP) (AECOM, 2022a).

2.0 Scope of Work

The sampling event at RAAF Base Amberley was completed in general accordance with the SAQP (AECOM, 2022a). In summary, the scope of works for this sampling event included:

- Obtaining access to private properties where some groundwater sampling locations are situated.
- Review of the SAQP prior to the monitoring event to ensure compliance with the following:
  - PFAS National Environmental Management Plan (NEMP) V2.0 (HEPA, 2020);
  - National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, as amended in 2013 (ASC NEPM, 2013);
  - Defence Routine Environment Water Quality Monitoring Manual;
  - AS/NZ 5667:1998 Water quality – Sampling;
  - Australian and New Zealand Guidelines for Fresh and Marine Water Quality; and
  - Relevant State regulatory guidelines.
- Gauging of groundwater elevation in 40 monitoring wells prior to collection of samples (refer to **Table 1** below, and **Figure 2** in **Appendix A** for specific locations).
- Collection of groundwater samples at 40 locations including 34 on-Site monitoring wells and six off-Site monitoring well locations. Details are included in **Table 1** below and **Figure 2** in **Appendix A**.
- Collection of co-located surface water and sediment samples at 49 locations, including 42 on-Site locations, and seven off-Site locations (refer below to **Table 2** and **Table 3** and **Figure 3** in **Appendix A**). It is noted that one surface water sample could not be collected during this sampling event. Refer to **Table 8** for more details.
- Downloading groundwater level data from data loggers installed in seven groundwater monitoring wells (MW025, MW028, MW032, MW055S, MW055D, MW056S, MW056I), refer to **Figure 2** in **Appendix A** for data logger locations. It is noted that data could not be downloaded from the logger installed in MW032, refer to **Table 8** for more details.
- Collection of intra- and inter- laboratory duplicate samples at a rate of 1 in 10 primary samples, one field blank sample per day, one rinsate sample per fieldwork day and one trip blank per batch.
- Analysis of all samples for the PFAS suite at the standard limit of reporting (LOR).
- Data management of all OMP field and laboratory data in the Defence ESdat database.
- Preparation of results letters for off-Site stakeholders.
- Preparation of this Sampling Event Factual Report.

Table 1 Groundwater Sampling Locations

Location		Monitoring Wells
Source Areas	Former Topside Aviation Fire Training Area (FTA) and current FTA Fire Pad (Confirmed Primary Source Area [CPSA] A)	MW002, MW033
	B Hangar 410 and Former Landfill	MW047
	Frogs Hollow Former Fire Training School Location (CPSA B)	MW037
	Sewage Treatment Plant (CPSA D)	MW021, MW032
	Historical Containment Pond (CPSA E)	MW048
	Former Fire Training Area and Operational Testing Area (CPSA G)	MW050
	Former Fire Training Area and Operational Testing Area (CPSA J)	MW005
	Potential Former Fire Training Area and Operations Test Area (CPSA L)	MW006, MW023, MW028, MW029, MW036
	Former Fuel Farm 1 and Triple Interceptor Pit (CPSA M)	MW309
	Potential Location of Aircraft F-4E Incident (CPSA T)	MW035
	AFFF Wastewater Holding Tank (CPSA V)	MW046
	Fire Fighting Training School (CPSA W)	MW026, MW030, MW031, MW042, MW043
	Former Structural and Open Pit Fire Training Area and Former Secondary Fire Training Area (CPSA X and Y)	MW041
	Fuel UST with AFFF listing (CPSA Z)	MW020
	Triple Interceptor Pits at Engine Test Cell Facilities 1 and 2 (CPSA AA)	MW007
	Areas used for irrigation – former grassed runways (CPSA BB)	MW012
	Former Landfill (CPSA CC)	MW022
	Former Fire Training Area on Disused Runway (CPSA DD)	MW049
Off-Site Warrill Creek		*MW054S, MW054D,* MW057S, MW057I
On-Site Bremer River		MW024, MW025, MW034, MW044, MW055S, MW055D
Off-Site Bremer River		MW056S, MW056I

Note: *Italics* indicates that the well is located on private property.
Wells with S, D or I are adjacent monitoring wells that are screened in different aquifers. 'S' indicates the well is screened in the shallow aquifer, 'D' or 'I' indicates the well is screened in the deeper aquifer. MW056I and MW057I were previously known as MW056D and MW057D.
MW002 was formerly known as MW2.

Table 2 Surface Water Sampling Locations

Area	Surface Water Sampling Locations	Number of Locations
On-Base Drains	SW002, SW003, SW008, SW011, SW021, SW027, SW028, SW030, SW033, SW037, SW038, SW041, SW048, SW049, SW053, SW056, SW059, SW064, SW067, SW076, SW079, SW080	22
Warrill Creek	SW004, SW005, SW009, SW015, SW016, SW018, SW020, SW026*, SW034, SW043*, SW099, SW100	12
Bremer River	SW025*, SW036, SW039*, SW040*, SW045*, SW047, SW050, SW051, SW052, SW088, SW089, SW090, SW091, SW094, SW098*	15

Note: * denotes off-Site sampling location.

Table 3 Sediment Sampling Locations

Area	Sediment Sampling Locations	Number of Locations
On-Base Drains	SD002, SD003, SD008, SD011, SD021, SD027, SD028, SD030, SD033, SD037, SD038, SD041, SD048, SD049, SD053, SD056, SD059, SD079, SD064, SD067, SD076, SD080	22
Warrill Creek	SD004, SD005, SD009, SD015, SD016, SD018, SD020, SD026*, SD034, SD043*, SD099, SD100	12
Bremer River	SD025*, SD036, SD039*, SD040*, SD045*, SD047, SD050, SD051, SD052, SD088, SD089, SD090, SD091, SD094, SD098*	15

Note: * denotes off-Site sampling location.

3.0 Methodology

The methodology used for the March/April 2022 sampling event was in accordance with the SAQP (AECOM, 2022a) and is summarised below. Deviations from the SAQP are discussed in **Section 3.6**.

3.1 Groundwater Sampling Methodology

The groundwater sampling methodology is outlined in **Table 4** below.

Table 4 Groundwater Sampling Methodology

Item	Details
Groundwater gauging	The depth to groundwater was measured in each monitoring well using an interface probe prior to the installation of HydraSleeves™, or if HydraSleeves were already installed, prior to retrieval of the HydraSleeve. Gauging was conducted in as short a time as possible, however, due to the number of wells and different requirements for accessing the monitoring well locations, the gauging took place over several days. Water level transducers are installed in seven monitoring wells to continuously record groundwater levels. A barometric logger is installed in MW028. Data collected since the previous OMP sampling event in October 2021 was downloaded.
Field parameters	Temperature, electrical conductivity (EC), dissolved oxygen (DO), oxidation-reduction potential (ORP), pH and observations of water quality were recorded for all groundwater samples. Field parameters were obtained before sampling. The probe on the water quality meter was decontaminated prior to being placed in the water sample.
Sampling methodology	Groundwater samples were collected from the majority of monitoring wells using no-purge methodology HydraSleeves™, which were installed within the screened interval of each well (based on a review of the well construction log) for a minimum of 24 hours prior to the sampling round. Once sampling was completed, new HydraSleeves™ were deployed at the screened interval depth in 19 of the monitoring wells in preparation for the next sampling round. HydraSleeves were not installed in 21 monitoring wells as they are regularly used for monitoring on other programs.
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), field blanks, rinsate samples and trip blanks. Refer to **Appendix C** for assessment of QA/QC sample data. Equipment calibration certificates are presented in **Appendix F**.
Sample analysis	All primary samples were submitted for analysis for the PFAS suite using the standard limit of reporting. ALS Environmental (ALS) Brisbane, Queensland was used as the primary laboratory. The National Measurement Institute (NMI) of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for groundwater analyses are certified by the National Association of Testing Authorities (NATA). Chain of custody (COC) forms are presented in **Appendix D**, laboratory analytical certificates are presented in **Appendix E**.

3.2 Surface Water Sampling Methodology

The methodology used for the March / April 2022 sampling event was in accordance with the SAQP (AECOM, 2022a) and is summarised in **Table 5** below.

Table 5 Surface Water Sampling Methodology

Item	Details
Field parameters	Temperature, EC, DO, ORP, pH and observations of water quality were recorded for all surface water samples.
Sample Collection Methodology	Samples were collected from immediately below the water surface to minimise collection of sediment or floating materials in the samples. At each location, a new, laboratory supplied container was lowered into the water with the cap immediately applied once the container was full.
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), field blanks, rinsate samples and trip blanks. Refer to **Appendix C** for assessment of QAQC sample data. Equipment calibration certificates are presented in **Appendix F**.
Sample analysis	All primary samples were submitted for PFAS suite using the standard limit of reporting. ALS Brisbane, Queensland was used as the primary laboratory. NMI of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for surface water analyses were certified by the NATA. Chain of custody forms are presented in **Appendix D**, laboratory analytical certificates are presented in **Appendix E**.

3.3 Sediment Sampling Methodology

The methodology used for the March/April 2022 sampling event was in accordance with the SAQP (AECOM, 2022a) and is summarised in **Table 6** below.

Table 6 Sediment Sampling Methodology

Item	Details
Sample Collection Methodology	Samples representative of potentially deposited sediments were collected from within the water body where possible. Sediment samples were collected by hand using new laboratory supplied nitrile gloves and a new laboratory supplied container at each location.
Logging	Sediment characterisation details were recorded for each sample.
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), field blanks, rinsate samples and trip blanks. Refer to **Appendix C** for assessment of QAQC sample data. Equipment calibration certificates are presented in **Appendix F**.
Sample analysis	All primary samples were submitted for PFAS suite using the standard limit of reporting. ALS Brisbane, Queensland was used as the primary laboratory. NMI of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for sediment analyses were certified by the NATA. Chain of custody forms are presented in **Appendix D**, laboratory analytical certificates are presented in **Appendix E**.

3.4 Adopted Screening Criteria

Adopted screening criteria references national guidance in the form of the PFAS National Environmental Management Plan, Defence estate and environmental strategies, and Defence PFAS-specific strategies and guidance. Guidance documents used to assess the dataset includes the following:

- PFAS NEMP, V2.0 (HEPA, 2020);
- Department of Health, 2019. *Health Based Guidance Values for PFAS for use in site investigations in Australia,* September 2019;
- National Health and Medical Research Council (NHMRC), 2019. Guidance on PFAS in Recreational Water, August 2019 (NHMRC, 2019);
- National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, as amended in 2013 (ASC NEPM, 2013).

In accordance with the OMP (Defence, 2020) and SAQP (AECOM, 2022a), the adopted PFAS screening criteria to assess the data generated as part of the OMP are presented in **Table 7** below.

Table 7 Summary of Adopted Screening Criteria

Pathway	Compound	Criteria	Comment / Reference
Human Health Receptors			
Drinking water – groundwater	PFOS + PFHxS	0.07 µg/L	The values are from the PFAS NEMP (HEPA, 2020). *All groundwater results will be compared to these criteria.*
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	The values are from NHMRC (2019). *All surface water results will be compared to these criteria.*
	PFOA	10 µg/L	
Ecological Receptors			
Freshwater (95% species protection values)	PFOS	0.13 µg/L	*The values are from the PFAS NEMP* (HEPA, 2020). *All surface water and groundwater results will be compared to these criteria.*
	PFOA	220 µg/L	
Freshwater (99% species protection values)	PFOS	0.00023 µg/L	
	PFOA	19 µg/L	

There are no current HEPA (2020) endorsed human health or ecological guideline values available for PFAS in sediment.

3.5 Data Quality Objectives and Data Validation

The data quality objectives and data quality indicators adopted for these works are presented in the SAQP (AECOM, 2022a).

Data validation assessment is provided in **Appendix C**. Data validation procedure employed in the assessment of the field and laboratory QA/QC data indicated that the reported analytical results are

representative of the sample locations and that the overall quality of the analytical data produced is acceptably reliable for the purpose of this report.

All data collected during this event has been reviewed and uploaded to the Defence Esdat database in accordance with Defence Contamination Management Manual (Defence, 2018) Annex L Guidance on Data Management (amended 2021) requirements.

3.6 Deviations from the SAQP

Table 8 lists the deviations from the SAQP (AECOM, 2022a) during this sampling event. The deviations are considered to be of low significance and have a minimal impact on the sampling event results.

Table 8 Deviations from the SAQP during sampling event for March/April 2022

SAQP	March/April 2022 Sampling Event
Collection of surface water samples at 49 locations	• A sample was not collected from SW067 as this location was dry during the sample visit. As the location was dry, there was no PFAS migrating in surface water at the time of the visit.
Download of data from seven data loggers	• Water level transducer data from the logger installed in MW032 could not be downloaded as the logger had ceased operation. Data at all other locations were downloaded.
Collection of sediment samples from 49 locations	• Sediment samples were collected by grab sample using a clean pair of nitrite gloves rather than being collected using a trenching shovel or piston sampler, which are specified in the SAQP (AECOM, 2022a). There is not considered to be any impact on the sample results due to the change in sampling technique.
Collection of field parameter data	• The SAQP does not specify whether field parameters should be collected before or after collection of the water sample. During the sampling event, all field measurements were collected before sampling. The probe on the water quality meter was decontaminated prior to measurements being collected from each water sample.

4.0 Field Observations and Results

The March/April 2022 sampling event was completed between 28 March and 6 April 2022. The results are summarised in following sections.

4.1 Groundwater

4.1.1 Groundwater Observations and Field Measurements

Table 9 Groundwater Observations and Field Measurements

Item	Details
Access	All monitoring wells were accessible.
Monitoring Well Network	No on-Site or off-Site monitoring wells were noted to be damaged during the fieldworks.
Field Observations	Groundwater from three monitoring wells had a sulfur odour (MW57I, MW044 and MW002). Groundwater from two monitoring wells had a septic odour (MW056S and MW056I). No other visible or olfactory indications of contamination were observed during the sampling of the other monitoring wells. Field observations are presented in **Table T1** in **Appendix B**.
Depth to Groundwater	Depth to groundwater in the Alluvium was between 2.995 and 15.33 metres below top of casing (mbtoc). Depth to groundwater in the Tertiary Formation was between 4.95 and 16.109 mbtoc. Depth to groundwater in the Walloon Coal Measures was between 5.315 and 24.14 mbtoc. Groundwater elevation in the Alluvium was between 9.783 and 17.725 mAHD. Groundwater elevation in the Tertiary Formation was between 16.545 and 28.795 mAHD. Groundwater elevation in the Walloon Coal Measures was between 14.056 and 36.638 mAHD. Groundwater gauging data are presented in **Table T1** in **Appendix B**. Water level transducer results for six monitoring wells are presented in **Appendix G**.
Groundwater Flow Direction	Inferred groundwater contours and groundwater flow directions at the Site in March/April 2022 for the Alluvium/Tertiary Formation are shown on **Figure 4** in **Appendix A**. The inferred local groundwater flow direction is towards the northeast and east in the direction of the Bremer River and Warrill Creek. The inferred flow direction is consistent with previous sampling events (AECOM, 2022b). Inferred groundwater contours and groundwater flow directions at the Site in March/April 2022 for the Walloon Coal Measures are shown on **Figure 4** in **Appendix A**. The inferred local groundwater flow direction is towards the east in the direction of the Bremer River and Warrill Creek. The inferred flow direction is consistent with previous sampling events (AECOM, 2022b).

<table>
<tr><th>Item</th><th>Details</th></tr>
<tr><td>Groundwater Quality Parameter Field Measurements</td><td>Groundwater quality parameters were measured prior to collecting groundwater samples. The readings are presented in Table T1 in Appendix B and are summarised per geological unit in the table below:
<table>
<tr><th>Unit</th><th>Parameter</th><th>Min</th><th>Max</th><th>Comment</th></tr>
<tr><td rowspan="4">Alluvium</td><td>DO (mg/L)</td><td>0.33</td><td>2.8</td><td>Poorly to moderately oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>314</td><td>4943</td><td>Fresh to brackish</td></tr>
<tr><td>pH</td><td>6.54</td><td>7.8</td><td>Near neutral to slightly alkaline</td></tr>
<tr><td>ORP (mV)</td><td>64.0</td><td>316.4</td><td>Mildly to moderately reducing</td></tr>
<tr><td>Temperature (°C)</td><td>21</td><td>24.3</td><td>-</td></tr>
<tr><td rowspan="4">Tertiary Formation</td><td>DO (mg/L)</td><td>0.27</td><td>1.13</td><td>Poor to mildly oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>405.6</td><td>23494</td><td>Fresh to saline</td></tr>
<tr><td>pH</td><td>6.41</td><td>7.38</td><td>Near neutral</td></tr>
<tr><td>ORP (mV)</td><td>57.7</td><td>198.1</td><td>Mildly to moderately reducing</td></tr>
<tr><td>Temperature (°C)</td><td>21.4</td><td>25.6</td><td>-</td></tr>
<tr><td rowspan="4">Walloon Coal Measures</td><td>DO (mg/L)</td><td>0.23</td><td>0.85</td><td>Poorly oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>321</td><td>55033</td><td>Fresh to saline</td></tr>
<tr><td>pH</td><td>6.43</td><td>7.35</td><td>Near neutral</td></tr>
<tr><td>ORP (mV)</td><td>96.7</td><td>205.8</td><td>Mildly to moderately reducing</td></tr>
<tr><td>Temperature (°C)</td><td>22.1</td><td>26.6</td><td>-</td></tr>
</table>
The measured parameter ranges are consistent with previous sampling event results (AECOM 2022b).</td></tr>
<tr><td>Weather Conditions</td><td>Weather conditions during groundwater sampling were generally hot with rain during March and humid weather during April. A total of 59.4 mm of rainfall was recorded during the sampling period from 28 March – 6 April 2022 (Bureau of Meteorology (BOM) station 040004 – ‘Amberley AMO).</td></tr>
<tr><td>Estate Management Works or Training Activities</td><td>During the sampling event no notable estate works or training activities were observed in the vicinity of sampling locations or are known to have taken place in the six months prior to the sampling event, which may have had a material impact upon the sampling event and analytical data.</td></tr>
</table>

4.1.2 Groundwater Analytical Results

The groundwater analytical results for PFAS from this sampling event are presented in **Table T2** in **Appendix B**.

Concentrations of sum of PFHxS and PFOS in 24 of the 40 groundwater samples exceeded the drinking water guideline value with six samples exceeding the PFOA guideline.

PFAS were detected above the limit of reporting in 27 of the 40 groundwater samples collected. All 27 groundwater samples that exceeded the limit of reporting exceeded the ecological guideline for PFOS for 99% protection of ecosystems with 21 of these samples also exceeding the 95% protection guideline value. One groundwater sample (MW046) exceeded the PFOA ecological guideline for 99% protection of freshwater species, but this sample did not exceed the 95% protection guideline.

First-time detections and exceedances from the historical dataset are recorded in **Table 10** below.

Table 10 First-time detections or exceedances of sum of PFHxS+PFOS or PFOA in groundwater

First time detection / exceedance	Ground-water Sampling location	Sum of PFHxS+PFOS concentration (µg/L)		PFOA concentration (µg/L)	
		March/April 2022	Historical maximum	March/April 2022	Historical maximum
First time detections of PFHxS+PFOS or PFOA in groundwater	MW054S	0.24	0.14	0.01	<0.01
	MW057S	0.67	0.2	0.04	<0.01
First time exceedances of PFHxS+PFOS or PFOA in groundwater	MW030	5.43	3.41	0.57	0.33

Note: Blue shading indicates a sample with a first-time detection of PFOS+PFHxS or PFOA
Yellow shading indicates a sample with a first-time exceedance above human health drinking water guideline values (refer to **Table 7**).

The first-time detections of PFOA in the samples from MW054S and MW057S were equal or close to the laboratory limit. PFAS is known to be present in groundwater at these locations and PFHxS and PFOS have been frequently detected in samples from these wells during historical sampling events.

The first-time exceedance of PFOA in the sample from MW030 marginally exceeded the human health drinking water guideline value. The concentration of sum of PFHxS and PFOS in this monitoring well has consistently exceeded the drinking water guideline value during historical sampling events.

4.2 Surface Water

4.2.1 Surface Water Observations and Field Measurements

Table 11 Surface Water Observations and Field Measurements

<table>
<tr><th>Item</th><th>Details</th></tr>
<tr><td>Access</td><td>All surface water sampling locations were accessed during the sampling event, with the exception of SW067, that was dry.</td></tr>
<tr><td>Field Observations</td><td>No visual or olfactory indications contamination were observed during the sampling of the other surface water sampling locations. Field observations are reported in Table T3, Appendix B.</td></tr>
<tr><td>Surface Water Quality Parameter Field Measurements</td><td>Surface water quality parameters were measured prior to collecting surface water samples. The readings are presented in Table T3 in Appendix B and are summarised below:
<table>
<tr><th>Unit</th><th>Parameter</th><th>Min</th><th>Max</th><th>Comment</th></tr>
<tr><td>Drain</td><td>DO (mg/L)</td><td>0.3</td><td>9.8</td><td>Poorly to well oxygenated</td></tr>
<tr><td></td><td>EC (µS/cm)</td><td>20.2</td><td>464.7</td><td>Fresh</td></tr>
<tr><td></td><td>pH</td><td>6.38</td><td>8.33</td><td>Near neutral to slightly alkaline</td></tr>
<tr><td></td><td>ORP (mV)</td><td>125.6</td><td>525</td><td>Moderately reducing to oxidising</td></tr>
<tr><td></td><td>Temperature (°C)</td><td>21.9</td><td>28.1</td><td>-</td></tr>
<tr><td>Warrill Creek</td><td>DO (mg/L)</td><td>4.01</td><td>6.63</td><td>Moderately to well oxygenated</td></tr>
<tr><td></td><td>EC (µS/cm)</td><td>163.6</td><td>3126</td><td>Fresh to brackish</td></tr>
<tr><td></td><td>pH</td><td>7.22</td><td>7.74</td><td>Near neutral</td></tr>
<tr><td></td><td>ORP (mV)</td><td>222.7</td><td>285.7</td><td>Mildly to moderately reducing</td></tr>
<tr><td></td><td>Temperature (°C)</td><td>22.5</td><td>23.4</td><td>-</td></tr>
<tr><td>Bremmer River</td><td>DO (mg/L)</td><td>4.60</td><td>6.73</td><td>Moderately to well oxygenated</td></tr>
<tr><td></td><td>EC (µS/cm)</td><td>163.6</td><td>654</td><td>Fresh</td></tr>
<tr><td></td><td>pH</td><td>7.19</td><td>7.93</td><td>Near neutral to slightly alkaline</td></tr>
<tr><td></td><td>ORP (mV)</td><td>131</td><td>317</td><td>Mildly to moderately reducing</td></tr>
<tr><td></td><td>Temperature (°C)</td><td>22.3</td><td>25.2</td><td>-</td></tr>
</table>
The measured parameter ranges are consistent with previous sampling event results (AECOM 2021b).</td></tr>
<tr><td>Weather Conditions</td><td>Weather conditions during surface water sampling were generally hot with rain during March and humid weather during April. A total of 59.4 mm of rainfall was recorded during the sampling period from 28 March – 6 April 2022 (Bureau of Meteorology (BOM) station 040004 – ‘Amberley AMO).</td></tr>
<tr><td>Estate Management Works or Training Activities</td><td>During the sampling event no notable estate works or training activities were observed in the vicinity of sampling locations or are known to have taken place in the six months prior to the sampling event, which may have had a material impact upon the sampling event and analytical data.</td></tr>
</table>

4.2.2 Surface Water Analytical Results

The analytical results for PFAS in surface water from this sampling event are presented in **Table T4** in **Appendix B**. There were one first-time exceedances of the adopted human health or ecological guidelines compared to the historical dataset. There were no first-time detections of PFHxS+PFOS and PFOA. First-time detections and exceedances from the historical dataset are recorded in **Table 12** below.

Table 12 First-time detections or exceedances of sum of PFHxS+PFOS or PFOA in surface water

First time detection / exceedance	Surface water Sampling location	Sum of PFHxS+PFOS concentration (µg/L)		PFOA concentration (µg/L)	
		March/April 2022	Historical maximum	March/April 2022	Historical maximum
First time exceedances of PFHxS+PFOS or PFOA in surface water	SW094	2.27	1.88	0.12	0.10

Note: Yellow shading indicates a sample with a first-time exceedance above human health recreational water guideline values (refer to **Table 7**).

The first-time exceedance of sum of PFHxS and PFOS in the sample from SW094 marginally exceeded the human health recreational water guideline value. The concentration of sum of PFHxS and PFOS in this surface water sample has been reported marginally below the guideline value during historical sampling events.

Concentrations of sum of PFHxS and PFOS in 13 of the 48 surface water samples exceeded the recreational water guideline value with none of the samples exceeding the PFOA guideline. All 38 surface water samples that exceeded the limit of reporting exceeded the ecological guideline for PFOS for 99% protection of ecosystems with 21 of these samples also exceeding the 95% protection guideline value. None of the samples exceeded the PFOA ecological guidelines for either 95% or 99% protection of freshwater species.

4.3 Sediment

4.3.1 Sediment Observations and Field Measurements

Table 13 Sediment Observations

Item	Details
Access	All sediment sample locations were accessible.
Field Observations	Sediment logging data are presented in **Table T5** in **Appendix B**. No visible or olfactory indications of contamination were observed during sampling at the sediment sampling locations.
Weather Conditions	Weather conditions during sediment sampling were generally hot with rain during March and humid weather during April. A total of 59.4 mm of rainfall was recorded during the sampling period from 28 March – 6 April 2022 (Bureau of Meteorology (BOM) station 040004 – 'Amberley AMO).
Estate Management Works or Training Activities	During the sampling event no notable estate works or training activities were observed in the vicinity of sampling locations or are known to have taken place in the six months prior to the sampling event, which may have had a material impact upon the sampling event and analytical data.

4.3.2 Sediment Analytical Results

The analytical results for PFAS in sediment from this sampling event are presented in **Table T6** in **Appendix B**. Compared to the historical dataset there was one first-time detection. This was in the sample from SD089 (0.0002 mg/kg).

5.0 Summary and Next Sampling Event

5.1 Summary of Monitoring Event

A groundwater, surface water and sediment monitoring event was completed within the RAAF Base Amberley Management Area between 28 March and 6 April 2022. The program included sampling of groundwater from 40 monitoring wells and 49 co-located surface water and sediment sampling locations. Forty of the monitoring wells, and 48 of the surface water locations and all 49 sediment locations were able to be sampled.

Table 14 summarises the findings of the March / April 2022 sampling event and the recommended actions.

Table 14 Summary of Sampling Event

Item	Comment	Recommended Actions
Access to sampling locations	All groundwater sampling locations were accessible. A surface water sample was not collected from SW067 as this location was dry. All sediment sampling locations were accessible.	Sampling of on-Site drains should continue to be timed to occur after a rainfall event.
Groundwater level loggers	The groundwater level logger deployed in MW032 appears to have failed.	Deployment of a new logger in MW032.
Monitoring well network condition	No issues were identified in the 40 monitoring wells sampled.	Ongoing monitoring in accordance with the OMP. A review of the OMP is being conducted during 2022 which will identify the sampling program after the October 2022 sampling event.
Analytical Results	Sum of PFHxS and PFOS or PFOA concentrations in 37 of 40 groundwater samples were consistent with historical results. Sum of PFHxS and PFOS or PFOA concentrations in 47 of 48 surface water samples collected were consistent with historical results. Sum of PFHxS and PFOS or PFOA concentrations in all 49 sediment samples were consistent with historical results.	Ongoing monitoring in accordance with the OMP. A review of the OMP is being conducted during 2022 which will identify the sampling program after the October 2022 sampling event.
First-time detections of Sum of PFHxS and PFOS or PFOA	Two first-time detections of PFOA were recorded in the groundwater samples from MW054S and MW057S, however, other PFAS including PFHxS and PFOS have been consistently detected in samples from these wells. No first-time detections of sum of PFHxS and PFOS or PFOA above the laboratory limit of reporting were recorded in any of the surface water samples collected. There was one first-time detection of sum of PFHxS and PFOS in	Ongoing monitoring in accordance with the OMP. A review of the OMP is being conducted during 2022 which will identify the sampling program after the October 2022 sampling event.

Item	Comment	Recommended Actions
	the sediment sample from SD089, which was equal to the limit of reporting.	
First time exceedance of NEMP guideline values	There was one first-time exceedance of the NEMP (HEPA, 2020) drinking water guideline value in groundwater. This was in the sample from MW030 where PFOA was recorded slightly exceeding the guideline value. However, sum of PFHxS and PFOS concentrations have consistently exceeded the guideline value in previous samples collected from this well. There was one first-time exceedance of the recreational water guideline value in surface water. This was in the sample from SW094 where the concentration of sum of PFHxS and PFOS slightly exceeding the guideline value.	Ongoing monitoring in accordance with the OMP. A review of the OMP is being conducted during 2022 which will identify the sampling program after the October 2022 sampling event.

5.2 Upcoming Sampling Events

The next biannual sampling event is scheduled for October 2022.

5.3 Upcoming Annual Interpretive Report

The next annual interpretative report is scheduled for February 2023.

6.0 References

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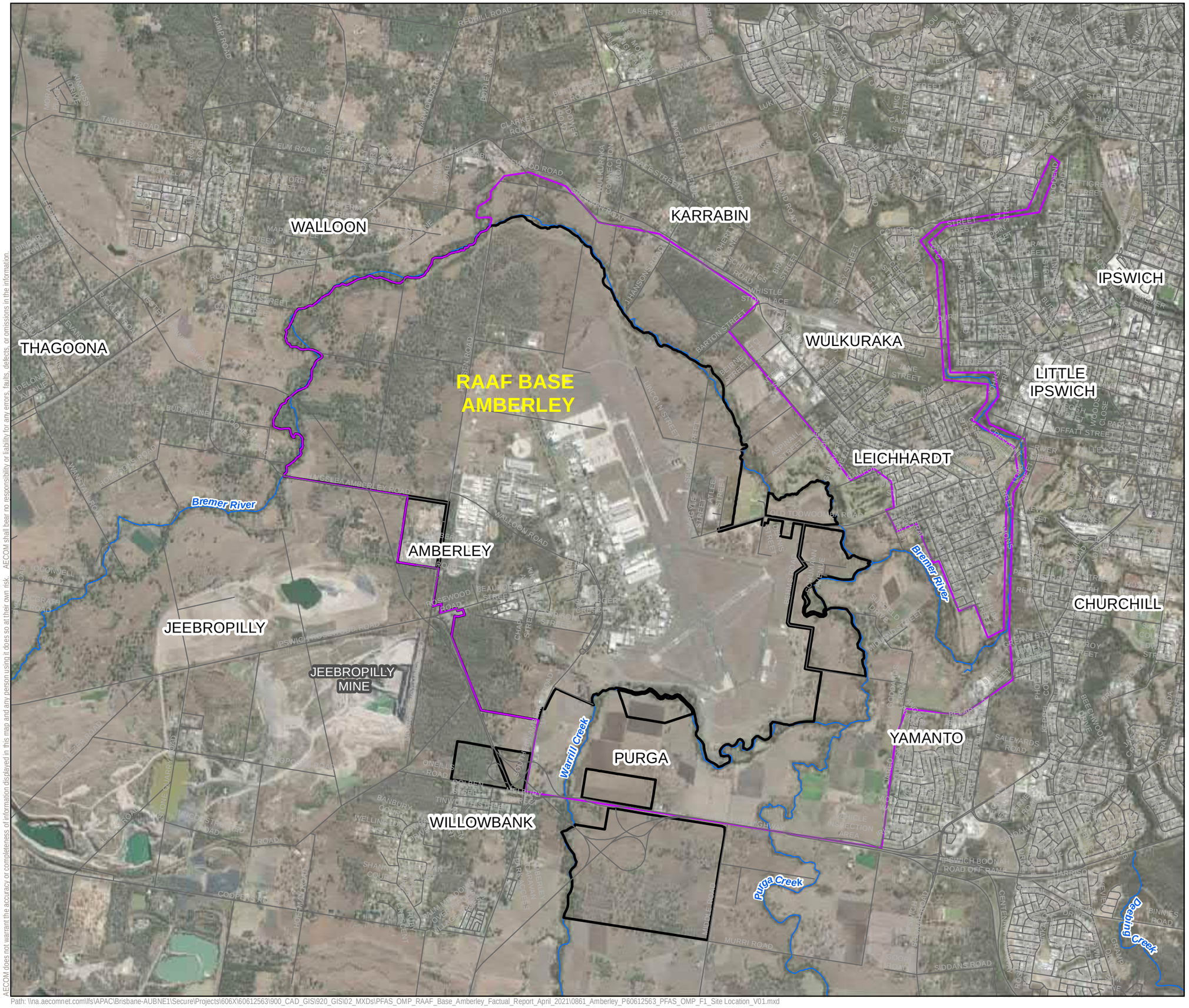
Appendix A

Figures

Appendix A Figures



LEGEND

- Management Area
- Base Boundary
- Watercourses

N

0 0.5 1 km

AECOM

SCALE 1:38,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 1: RAAF BASE AMBERLEY LOCATION

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY SAMPLING EVENT,
FACTUAL REPORT: March/April 2022

CLIENT

DEPARTMENT OF DEFENCE

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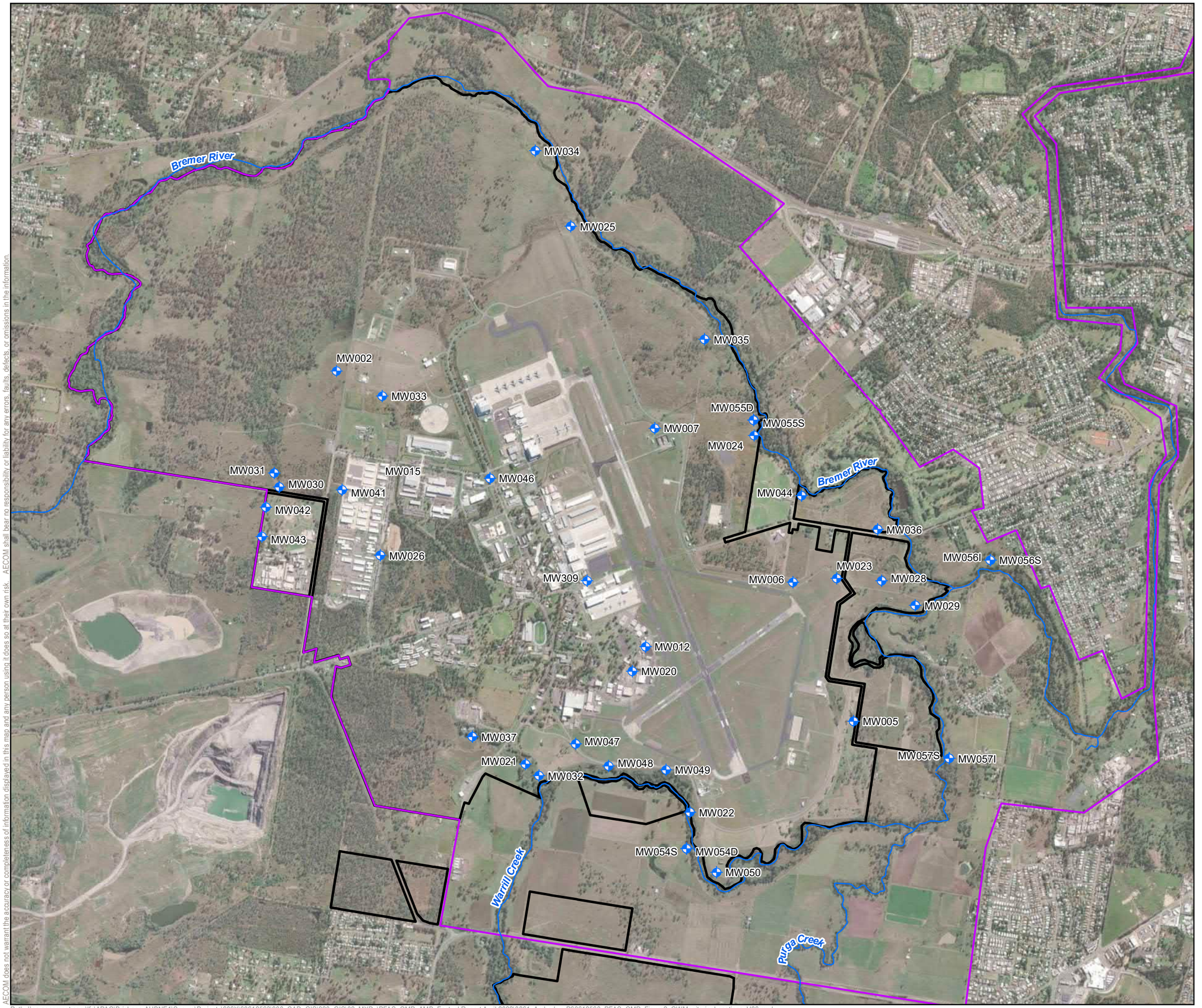

LEGEND

- Groundwater Monitoring Wells – sample collected

N

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 2: Groundwater Monitoring Wells

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT,
FACTUAL REPORT: MARCH/APRIL 2022

CLIENT

DEPARTMENT OF DEFENCE

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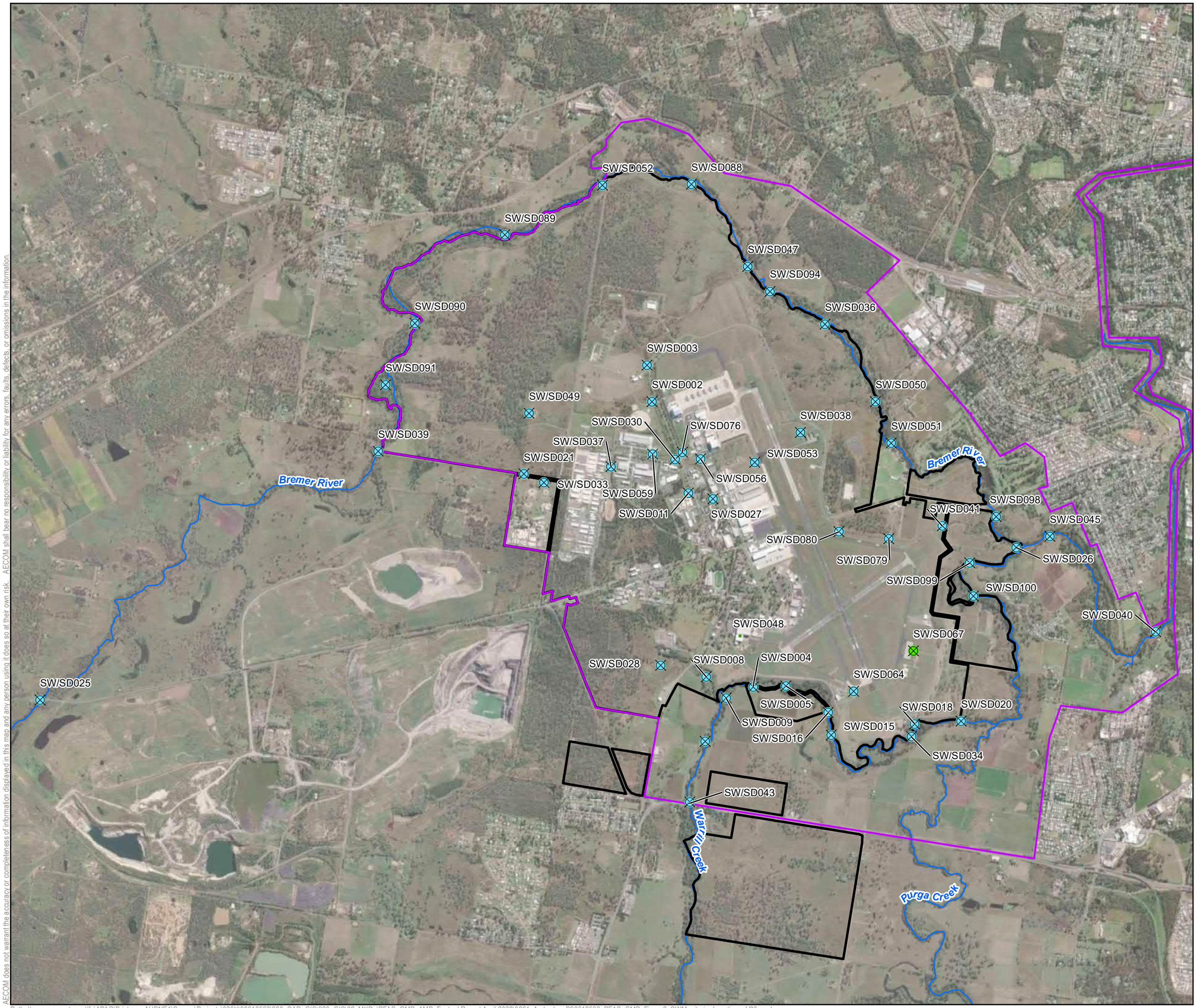

LEGEND

- Sediment sampled collected, surface water sample not collected
- Surface Water / Sediment Sample
- Management Area
- Base Boundary

km
0 0.5 1

AECOM

SCALE 1:35,000
SIZE A3
SHEET
COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 3: Surface Water and Sediment Sampling Locations

PROJECT
PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT,
FACTUAL REPORT: MARCH/APRIL 2022

CLIENT
DEPARTMENT OF DEFENCE

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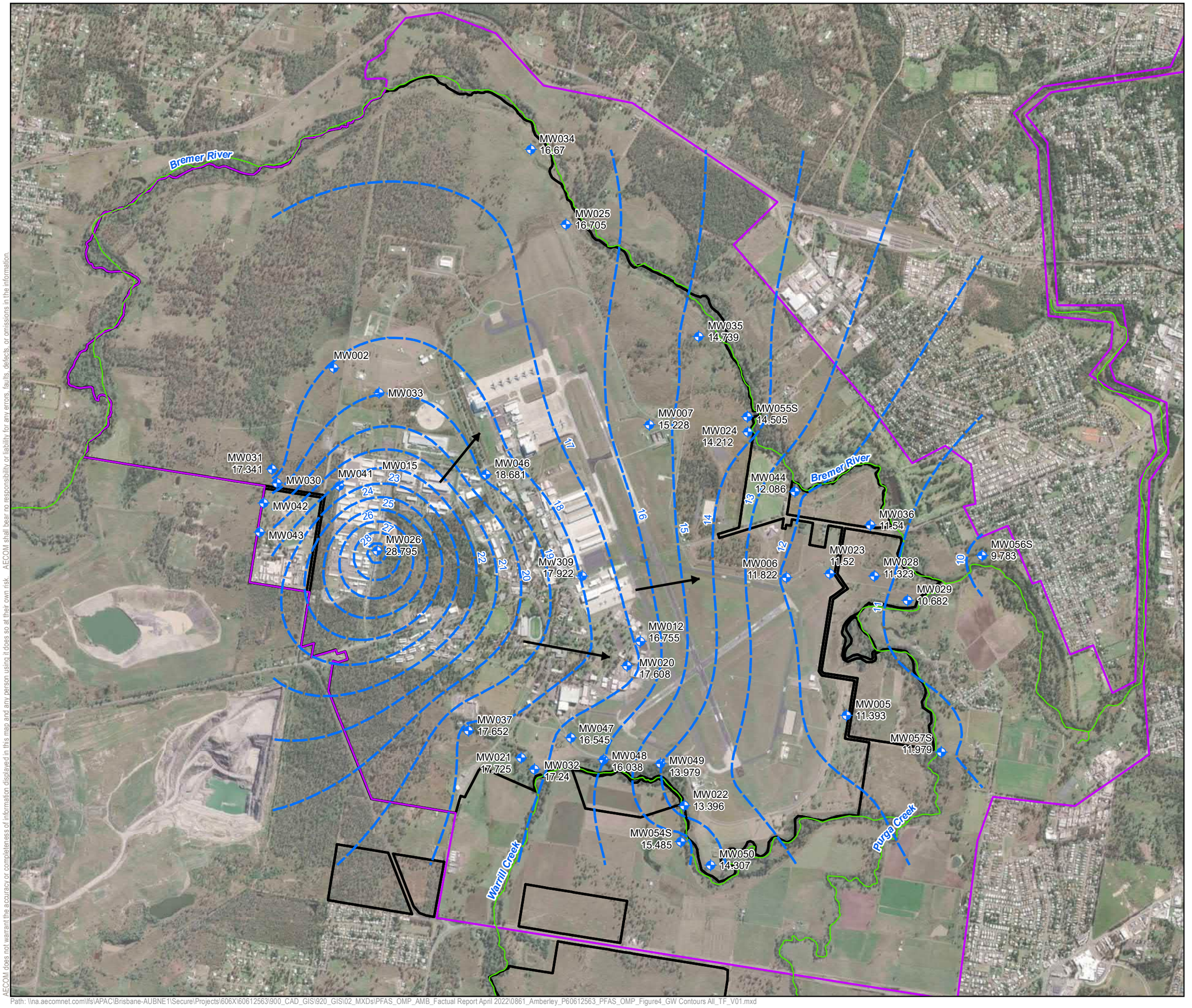

LEGEND

- Groundwater elevation (mAHD)
- Management Area
- Base Boundary
- Groundwater contours (mAHD)
- Groundwater flow direction

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 4: Inferred Groundwater Contours in the Alluvium / Tertiary Formation -

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY SAMPLING EVENT,
FACTUAL REPORT: MARCH/APRIL 2022

CLIENT

DEPARTMENT OF DEFENCE

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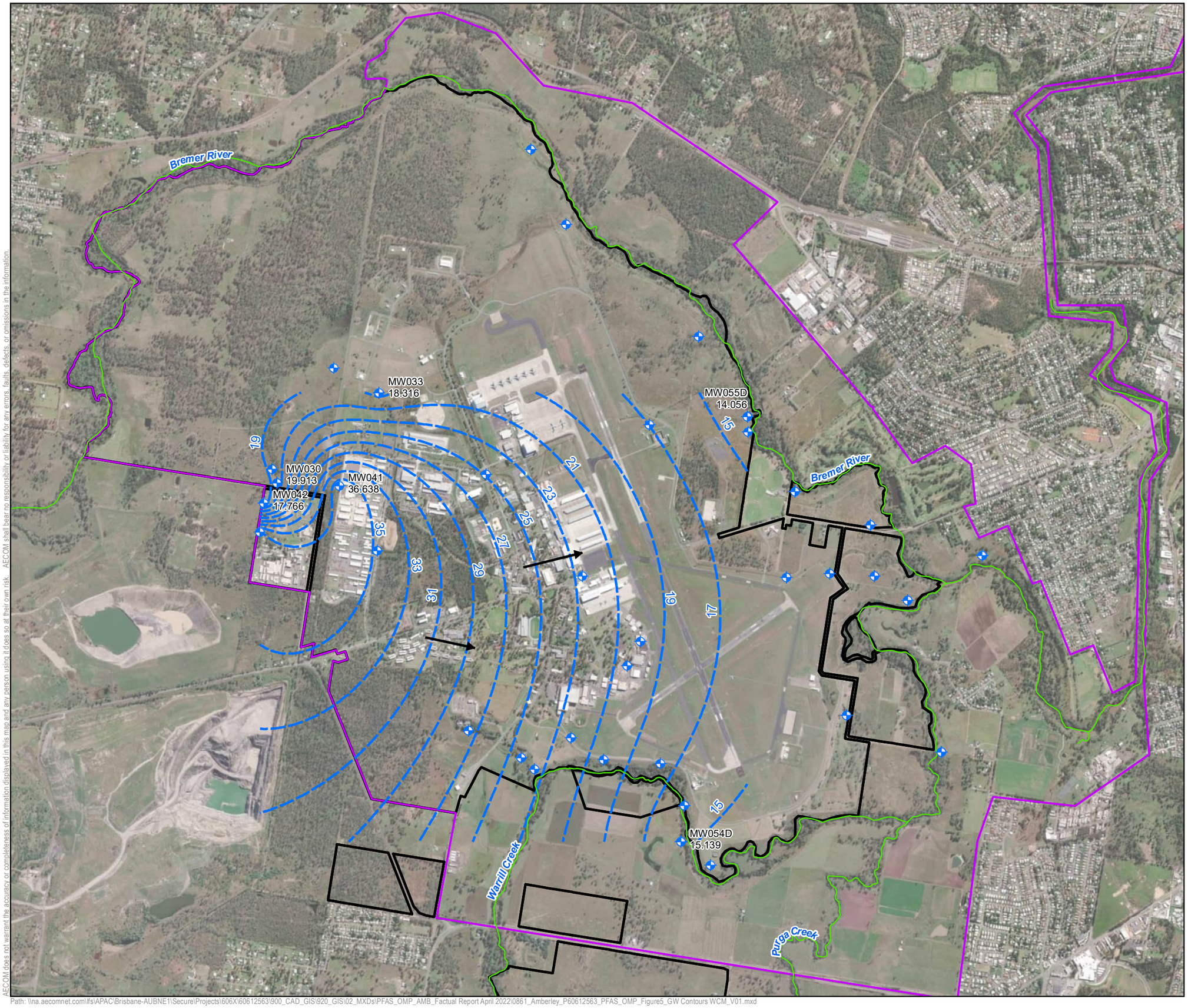

LEGEND

- Groundwater Monitoring Well
- Management Area
- Base Boundary
- Groundwater contour (mAHD)
- Groundwater flow direction

N

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET -

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 5: Inferred Groundwater Contours in the Walloon Coal Measures - March / April 2022

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY SAMPLING EVENT,
FACTUAL REPORT: MARCH/APRIL 2022

CLIENT

DEPARTMENT OF DEFENCE

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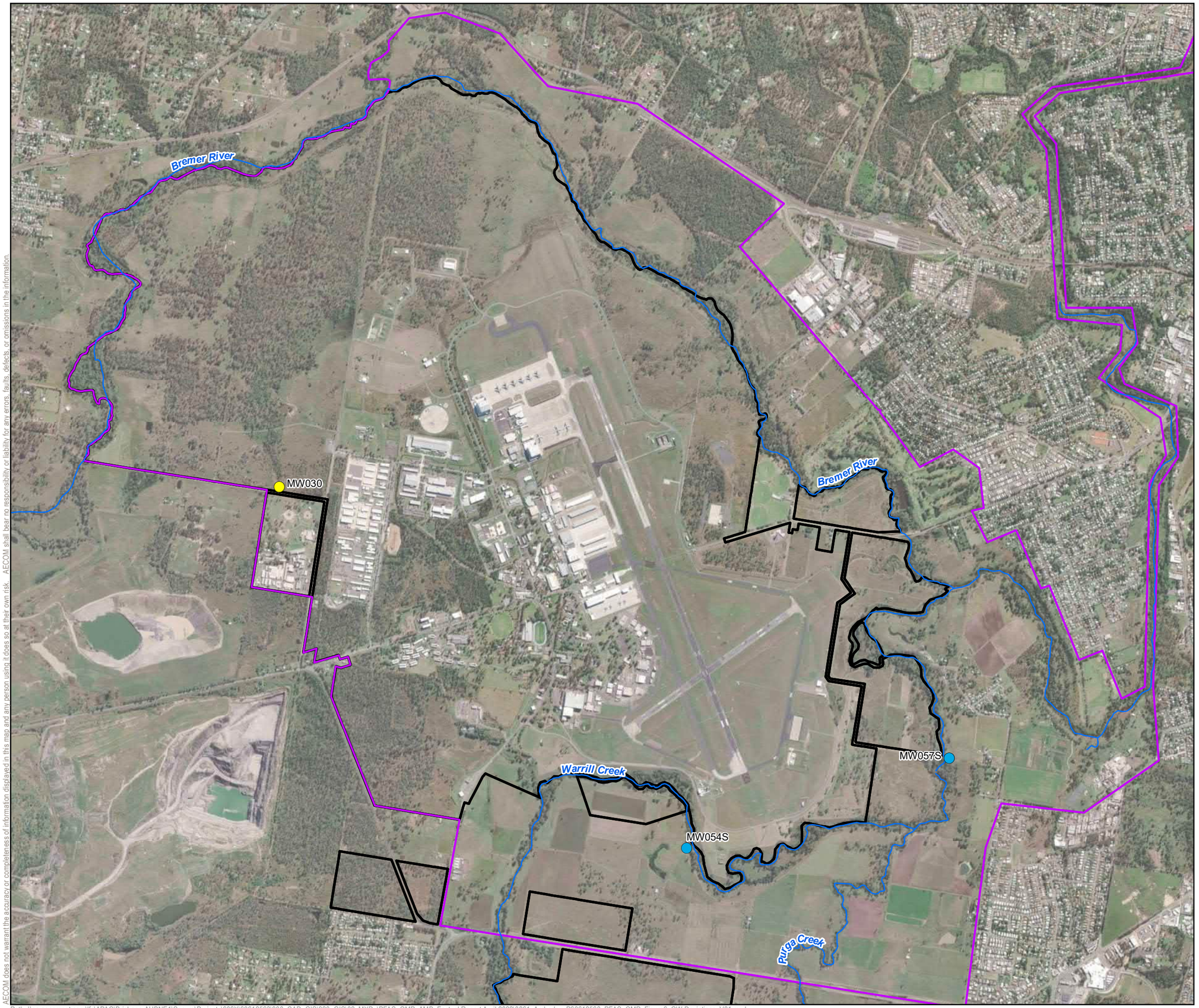

LEGEND

- First time detection of PFHxS+PFOS or PFOA
- First time exceedance of human health screening guideline value for PFHxS+PFOS or PFOA
- Management Area
- Base Boundary

N

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 6: Groundwater Results Deviations from Historical Data

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY SAMPLING EVENT, FACTUAL REPORT: MARCH/APRIL 2022

CLIENT

DEPARTMENT OF DEFENCE

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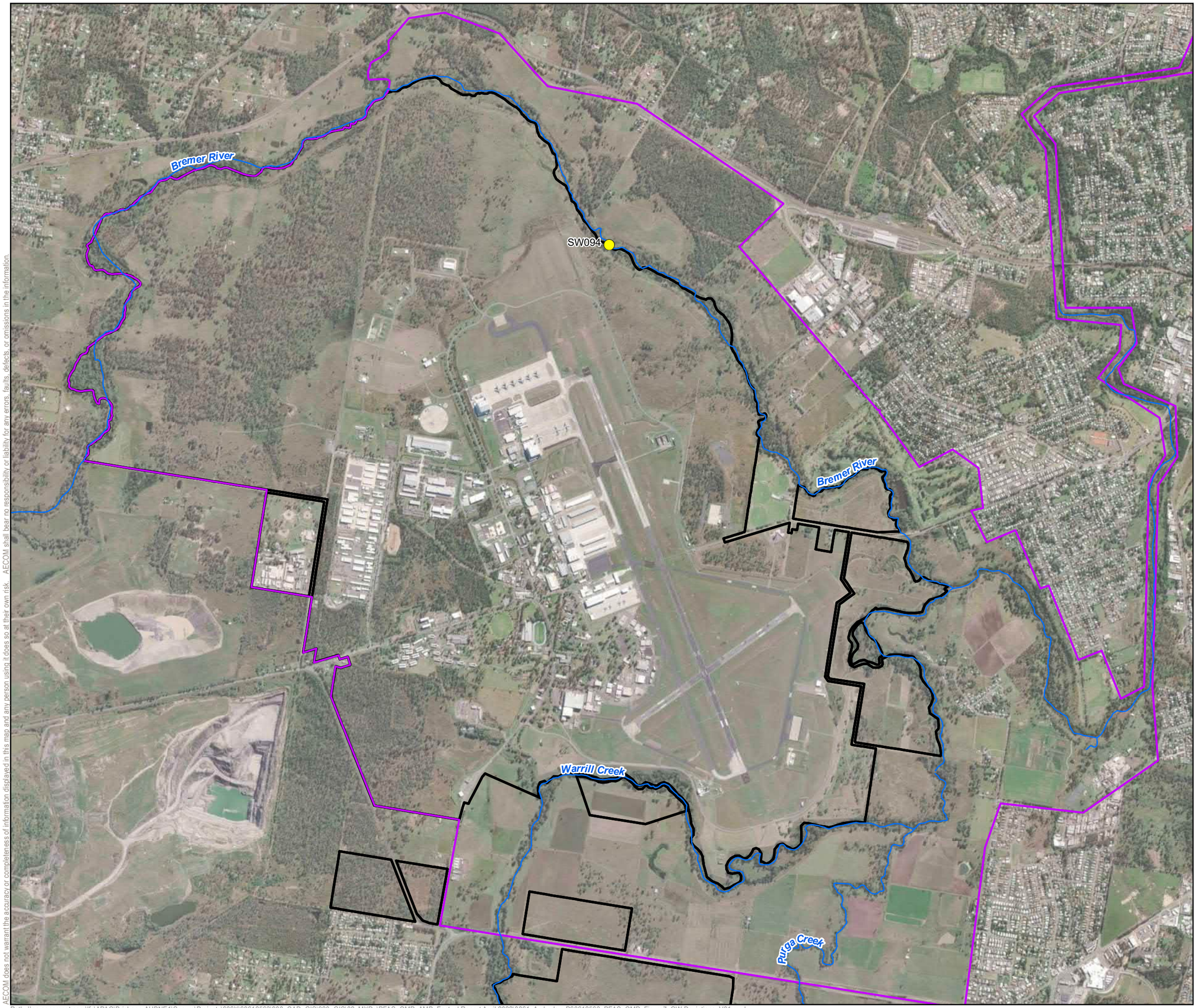

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LEGEND

- First time detection of PFHxS+PFOS or PFOA
- First time detection exceedance of human health screening critiera for PFHxS+PFOS or PFOA
- Management Area
- Base Boundary

km
0 0.5 1

AECOM

SCALE 1:26,000
SIZE A3
SHEET
COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 7: Surface Water Results Deviations from Historical Data

PROJECT
PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT,
FACTUAL REPORT: MARCH/APRIL 2022

CLIENT
DEPARTMENT OF DEFENCE

Appendix B

Tables

Appendix B Tables

Property ID	Well ID	Screen depth (m)	Hydrasleeve Install Date	Approximate Hydrasleeve Installation Depth (mbtoc)	Hydrasleeve Sample Date	Hydrasleeve Redeployed Post-Sampling?	Aquifer	Well Depth (mbtoc)	Depth to Water (mbtoc)	TOC Elevation (mAHD)	Groundwater Elevation (mAHD)	Condition of Well	DO (mg/L)	EC (µS/cm)	pH	Er (mV)	Eh (mV)	Temp (°C)	Water Colour	Odour	Sheen	Sample Method / Comments
0861	MW002	16.7-23.7	21/10/2021	22.50	31/03/2022	Yes	Walloon Coal Measures	24.08	17.5	Unknown	Unknown	Good	0.72	13559	6.47	-29.5	175.5	23.3	Light Grey	Sulfurous	No sheen	Hydrasleeve
0861	MW005	13.0-17.0	04/04/2022	16.00	06/04/2022	No	Alluvium	17.78	15.33	26.725	11.395	Good	0.57	2129	6.87	4.0	209	22.5	Clear	No odour	No sheen	Hydrasleeve
0861	MW006	10.3-14.3	06/04/2022	12.00	07/04/2022	No	Alluvium	13.27	10.115	21.937	11.822	Good	1.74	1338	7.66	62.9	267.9	21	Clear	No odour	No sheen	Hydrasleeve
0861	MW007	6.0-10.0	30/03/2022	9.00	06/04/2022	No	Alluvium	10.78	7.98	23.208	15.228	Good	0.43	927	7.8	-118.8	86.2	23	Clear	No odour	No sheen	Hydrasleeve
0861	MW012	12.5-17.5	04/04/2022	15.00	06/04/2022	No	Tertiary Formation	16.1	9.42	26.175	16.755	Good	0.39	12977	6.52	-37.1	167.9	25.2	Clear	No odour	No sheen	Hydrasleeve
0861	MW020	23.5-16.5	04/04/2022	15.00	06/04/2022	No	Tertiary Formation	16.2	9.435	27.043	17.608	Good	0.49	11206	6.41	-6.9	198.1	25.6	Clear	No odour	No sheen	Hydrasleeve
0861	MW021	2.5-6.0	28/03/2022	4.50	30/03/2022	No	Alluvium	5.67	2.995	20.72	17.725	Good	0.62	978	7.3	-100.2	104.8	24.1	Clear	No odour	No sheen	Hydrasleeve
0861	MW022	4.0-9.0	29/03/2022	8.00	30/03/2022	No	Alluvium	9.705	6.254	19.65	13.396	Good	0.48	682	6.85	-92.4	112.6	23	Light Yellow / Brown	No odour	No sheen	Hydrasleeve
0861	MW023	7.8-11.8	06/04/2022	11.00	07/04/2022	No	Alluvium	12.81	8.99	20.51	11.52	Good	0.43	494.1	7.5	54.9	259.9	21.6	Clear	No odour	No sheen	Hydrasleeve
0861	MW024	7.0-11.0	01/04/2021	10.50	04/04/2022	Yes	Alluvium	11.93	6.738	20.95	14.212	Good	0.81	2687	7.09	92.7	297.7	22.4	Clear	No odour	No sheen	Hydrasleeve
0861	MW025	7.4-11.4	30/03/2022	10.00	06/04/2022	No	Alluvium	12.2	8.715	25.42	16.705	Good	0.62	1347	7.27	-58.9	146.1	23.5	Clear	No odour	No sheen	Hydrasleeve
0861	MW026	14.5-17.5	04/04/2022	16.00	06/04/2022	No	Tertiary Formation	17.37	11.445	40.24	28.795	Good	0.67	23494	6.48	-20.8	184.2	24.4	Light Yellow / Brown	No odour	No sheen	Hydrasleeve
0861	MW028	10.5-14.5	29/03/2022	12.50	04/04/2022	No	Alluvium	13.9	9.507	20.83	11.323	Good	0.73	1565	7.13	-13.2	191.8	23.7	Clear	No odour	No sheen	Hydrasleeve
0861	MW029	7.0-10.0	29/03/2022	9.00	04/04/2022	No	Alluvium	11.09	7.548	18.23	10.682	Good	1.4	4943	6.93	49.9	254.9	23.7	Clear	No odour	No sheen	Hydrasleeve
0861	MW030	17.0-21.0	31/03/2022	20.00	01/04/2022	No	Walloon Coal Measures	21.82	15.927	35.84	19.913	Good	0.85	19824	6.61	0.8	205.8	22.1	Clear	No odour	No sheen	Hydrasleeve
0861	MW309	13.0-19.0	26/10/2021	18.00	30/03/2022	Yes	Tertiary Formation	19.23	10.685	28.607	17.922	Good	0.27	10890	6.6	-73.6	131.4	25.4	Grey	No odour	No sheen	Hydrasleeve
0861	MW031	14.5-20.5	31/03/2022	17.00	01/04/2022	No	Tertiary Formation	18.03	16.109	33.45	17.341	Good	1.13	13761	6.56	-57.7	147.3	21.4	Light Grey	No odour	No sheen	Hydrasleeve
0861	MW032	8.0-14.0	04/04/2022	13.00	06/04/2022	No	Alluvium	14.63	9.04	26.28	17.24	Good	1.02	2848	7.05	-28.3	176.7	22.7	Clear	No odour	No sheen	Hydrasleeve
0861	MW033	29.0-33.0	04/04/2022	32.00	06/04/2022	No	Walloon Coal Measures	34.67	24.14	42.456	18.316	Good	0.6	13756	6.66	-48.5	156.5	24.1	Clear	No odour	No sheen	Hydrasleeve
0861	MW034	5.0-10.0	31/03/2022	9.00	01/04/2022	No	Alluvium	10.605	7.635	24.305	16.67	Good	1.05	675	7.69	6	211	21.6	Clear	No odour	No sheen	Hydrasleeve
0861	MW035	8.0-13.5	01/04/2022	12.50	04/04/2022	No	Alluvium	14.455	10.26	24.999	14.739	Good	0.82	2553	6.86	111.4	316.4	23.3	Clear	No odour	No sheen	Hydrasleeve
0861	MW036	10.2-15.2	01/04/2022	14.00	04/04/2022	No	Alluvium	15.01	12.5	24.04	11.54	Good	0.94	1927	7.08	95.1	300.1	23.5	Clear	No odour	No sheen	Hydrasleeve
0861	MW037	5.0-10.0	29/03/2022	9.00	30/03/2022	No	Alluvium	10.97	7.567	25.219	17.652	Good	0.7	3998	6.98	-141	64	22.6	Light Yellow / Brown	No odour	No sheen	Hydrasleeve
0861	MW041	11.5-14.5	22/10/2021	13.00	05/04/2022	Yes	Walloon Coal Measures	14.37	9.745	46.383	36.638	Good	0.45	15939	6.59	-69.1	135.9	26.6	Light Yellow	No odour	No sheen	Hydrasleeve
0861	MW042	24.0-30.0	26/10/2021	27.50	05/04/2022	Yes	Walloon Coal Measures	28.86	22.27	40.036	17.766	Good	0.78	17179	6.59	-87.8	117.2	26.3	Clear	No odour	No sheen	Hydrasleeve
0861	MW043	18.0-21.0	26/10/2021	19.50	05/04/2022	Yes	Walloon Coal Measures	20.58	13.695	49.182	35.487	Good	0.47	7177	7.11	-108.3	96.7	25.5	Light Yellow / Brown	No odour	No sheen	Hydrasleeve
0861	MW044	8.0-11.0	21/10/2021	10.00	01/04/2022	Yes	Alluvium	11.11	8.225	20.311	12.086	Good	0.54	334.8	6.98	-101.3	103.7	23.3	Light Yellow / Brown	Sulfurous	No sheen	Hydrasleeve
0861	MW046	8.2-11.2	26/10/2021	10.00	30/03/2022	Yes	Tertiary Formation	11.04	7.32	26.001	18.681	Good	0.5	2295	7.17	-112.9	92.1	24.3	Light Yellow / Brown	No odour	No sheen	Hydrasleeve
0861	MW047	10.5-13.5	26/10/2021	12.00	30/03/2022	Yes	Tertiary Formation	13.17	9.72	26.265	16.545	Good	0.74	2703	7.38	-147.3	57.7	23.9	Light Yellow / Brown	No odour	No sheen	Hydrasleeve
0861	MW048	7.5-10.5	21/10/2021	9.00	29/03/2022	Yes	Alluvium	10.23	7.07	23.108	16.038	Good	2.8	314.1	6.57	6.5	211.5	22	Light Grey	No odour	No sheen	Hydrasleeve
0861	MW049	7.5-10.5	21/10/2021	9.00	07/04/2022	Yes	Alluvium	10.26	8.065	22.044	13.979	Good	0.41	332.5	6.54	-93.9	111.1	21.7	Clear	No odour	No sheen	Hydrasleeve
0861	MW050	11.5-14.5	28/10/2021	12.50	30/03/2022	Yes	Alluvium	14.31	10.01	24.317	14.307	Good	0.82	1524	7.08	-118.5	86.5	23.7	Light Yellow	No odour	No sheen	Hydrasleeve
0861	MW054D	18.0-21.0	28/10/2021	19.50	05/04/2022	Yes	Walloon Coal Measures	20.79	5.315	20.454	15.139	Good	0.23	321.1	6.43	-88.8	116.2	26	Light Yellow	No odour	No sheen	Hydrasleeve
0861	MW054S	4.0-7.0	28/10/2021	5.50	05/04/2022	Yes	Alluvium	6.9	4.895	20.38	15.485	Good	0.77	2834	6.75	-83	122	24.3	Light Yellow	No odour	No sheen	Hydrasleeve
0861	MW055D	28.0-34.0	21/10/2021	32.50	01/04/2022	Yes	Walloon Coal Measures	33.76	8.14	22.196	14.056	Good	0.64	55033	7.35	-91.3	113.7	24.5	Clear	No odour	No sheen	Hydrasleeve
0861	MW055S	9.0-12.0	21/10/2021	10.50	01/04/2022	Yes	Alluvium	11.57	7.635	22.14	14.505	Good	0.33	1155	6.72	-78.3	126.7	23.7	Clear	No odour	No sheen	Hydrasleeve
0861	MW056I	15.0-18.0	22/10/2021	17.00	29/03/2022	Yes	Tertiary Formation	18.00	4.95	14.762	9.812	Good	0.63	405.6	6.83	-41	164	22	Light Grey	Weak Septic	No sheen	Hydrasleeve
0861	MW056S	6.5-9.5	22/10/2021	8.50	29/03/2022	Yes	Alluvium	9.50	5.295	15.078	9.783	Good	0.63	405.6	6.83	-61.9	143.1	22.4	Light Grey	Weak Septic	No sheen	Hydrasleeve
0861	MW057I	12.5-15.5	22/10/2021	14.50	04/04/2022	Yes	Tertiary Formation	15.445	5.41	16.494	11.084	Good	0.91	418.6	6.99	-96.8	108.2	23.7	Light Yellow	Sulfurous	No sheen	Hydrasleeve
0861	MW057S	5.5-8.5	22/10/2021	7.00	04/04/2022	Yes	Alluvium	8.45	4.5	16.479	11.979	Good	1.26	613	6.9	-110.2	94.8	23.4	Clear	No odour	No sheen	Hydrasleeve

Notes
mbtoc - metres below top of casing
mAHD - metres above Australian Height Datum
TOC - top of casing
DO - Dissolved Oxygen
EC - Electrical Conductivity
Er - Uncorrected Oxidation Reduction Potential
Eh - Corrected Oxidation Reduction Potential
` - no data
Er converted to Eh by adding 205 based on a YSI with Ag/AgCl sensor calibrated to a 3.5 molar KCL solution
mg/L - milligrams per litre
µS/cm - microsiemens per centimetre
mV - millivolts
°C - degrees Celcius

		PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSE	EtFOSE	MeFOSA	EtFOSA	MeFOSAA	EtFOSAA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.1	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.05	0.02	0.02	0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.01
NEMP (2020) Human Health Drinking Water		**0.07**											**0.56**																		
NEMP (2020) Freshwater 99% Species Protection							*0.00023*						***19***																		
NEMP (2020) Freshwater 95% Species Protection							***0.13***						*220*																		

Location ID	Sample ID	Sample Date	Lab Report No.																													
MW002	0861_MW002_220331	31/03/2022	EB2209950	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*
MW005	0861_MW005_220406	6/04/2022	EB2209951	**0.07**	*<0.02*	*<0.02*	0.05	*<0.02*	*0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.07
MW006	0861_MW006_220407	7/04/2022	EB2209951	**52.5**	1.82	1.83	10.5	0.45	**42**	*<0.05*	0.8	2.11	3.79	0.75	**1.03**	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	0.28	*<0.12*	*<0.12*	*<0.12*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	0.39	*<0.05*	*<0.05*	65.8
MW007	0861_MW007_220406	6/04/2022	EB2209951	**5.95**	0.19	0.18	1.26	0.11	**4.69**	*<0.02*	*<0.1*	0.08	0.27	0.05	0.11	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	0.1	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	7.04
MW012	0861_MW012_220406	6/04/2022	EB2209951	**0.17**	*<0.05*	*<0.02*	*<0.02*	*<0.02*	**0.17**	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.06*	*<0.06*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.17
MW020	0861_MW020_220406	6/04/2022	EB2209951	**85.9**	1.42	1.57	13.8	1.55	**72.1**	*<0.05*	<0.9	2.71	4.22	1.19	**2.6**	0.51	0.11	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.12*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	0.71	*<0.1*	*<0.05*	102
MW021	0861_MW021_220330	30/03/2022	EB2209950	**59.9**	1.6	2.32	24.9	1.08	**35**	*<0.05*	<0.4	0.69	3.12	0.74	**2.43**	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.12*	*<0.05*	*<0.12*	*<0.12*	*<0.12*	*<0.12*	*<0.05*	*<0.05*	*<0.05*	*<0.25*	*<0.05*	*<0.05*	71.9
MW022	0861_MW022_220330	30/03/2022	EB2209950	**4.24**	0.61	0.61	3.95	0.05	**0.29**	*<0.02*	0.2	0.13	0.57	0.07	0.14	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	6.62
MW023	0861_MW023_220407	7/04/2022	EB2209951	**0.84**	0.16	0.16	0.66	*<0.02*	**0.18**	*<0.02*	*<0.1*	*<0.02*	0.04	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	1.2
MW024	0861_MW024_220404	4/04/2022	EB2209950	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*
MW025	0861_MW025_220406	6/04/2022	EB2209951	**1.63**	0.28	0.21	1.17	0.04	**0.46**	*<0.02*	0.2	0.21	0.29	0.08	0.12	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	3.06
MW026	0861_MW026_220406	6/04/2022	EB2209951	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.06*	*<0.06*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*
MW028	0861_MW028_220404	4/04/2022	EB2209950	**4.87**	0.22	0.21	1.5	0.2	**3.37**	*<0.02*	*<0.1*	0.07	0.31	0.05	0.13	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	6.06
MW029	0861_MW029_220404	4/04/2022	EB2209950	**11.2**	0.83	1.02	5.11	0.5	**6.04**	*<0.02*	<0.2	0.2	0.92	0.17	0.32	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	15.1
MW030	0861_MW030_220401	1/04/2022	EB2209950	**5.43**	2.97	2.2	5.31	<0.07	*0.12*	*<0.02*	0.7	1.14	6.31	0.88	**0.57**	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.06*	*<0.06*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	20.2
MW031	0861_MW031_220401	1/04/2022	EB2209950	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*
MW032	0861_MW032_220406	6/04/2022	EB2209951	**34.8**	2.21	2.07	10.2	0.92	**24.6**	*<0.02*	0.7	0.86	4.23	1.11	**2.67**	0.06	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.06*	*<0.06*	*<0.02*	*<0.02*	*<0.05*	0.08	*<0.05*	*<0.05*	49.7
MW033	0861_MW033_220406	6/04/2022	EB2209951	*<0.01*	*<0.04*	*<0.02*	*<0.01*	*<0.02*	*<0.04*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*
MW034	0861_MW034_220401	1/04/2022	EB2209950	0.01	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.01
MW035	0861_MW035_220404	4/04/2022	EB2209950	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*
MW036	0861_MW036_220404	4/04/2022	EB2209950	0.04	*<0.02*	*<0.02*	0.04	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.04
MW037	0861_MW037_220330	30/03/2022	EB2209950	**4.26**	0.55	0.4	1.75	0.07	**2.51**	*<0.02*	*<0.1*	0.08	0.42	0.05	0.08	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	5.91
MW041	0861_MW041_220405	5/04/2022	EB2209951	**0.44**	0.31	0.05	0.14	*<0.02*	**0.3**	*<0.02*	*<0.3*	0.37	0.21	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.06*	*<0.06*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	1.38
MW042	0861_MW042_220405	5/04/2022	EB2209951	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*
MW043	0861_MW043_220405	5/04/2022	EB2209951	**0.39**	0.28	0.09	0.21	*<0.02*	**0.18**	*<0.02*	*<0.1*	0.08	0.14	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.06*	*<0.06*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.98
MW044	0861_MW044_220401	1/04/2022	EB2209950	0.01	*<0.02*	*<0.02*	0.01	*<0.02*	*<0.03*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.01
MW046	0861_MW046_220330	30/03/2022	EB2209950	**264**	12.3	11.8	85	7.15	**179**	*<0.25*	13	28	45.4	9.28	***22.1***	0.42	*<0.25*	*<0.25*	*<0.25*	*<0.25*	*<0.62*	*<0.25*	*<0.62*	*<0.62*	*<0.62*	*<0.62*	*<0.25*	*<0.25*	*<0.25*	34.5	1.6	*<0.25*	450
MW047	0861_MW047_220330	30/03/2022	EB2209950	**6.85**	0.86	0.64	4.01	0.16	**2.84**	*<0.02*	0.3	0.4	1.03	0.1	0.17	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	0.06	*<0.05*	*<0.05*	10.6
MW048	0861_MW048_220329	29/03/2022	EB2209950	**5.15**	0.37	0.33	2.19	0.13	**2.96**	*<0.02*	*<0.1*	0.12	0.44	0.06	0.13	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	6.73
MW049	0861_MW049_220407	7/04/2022	EB2209951	**4.83**	0.42	0.36	1.68	0.08	**3.15**	*<0.02*	0.2	0.18	0.57	0.08	0.16	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	6.88
MW050	0861_MW050_220330	30/03/2022	EB2209950	**0.08**	*<0.02*	*<0.02*	0.01	*<0.02*	*0.07*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.08
MW054D	0861_MW054D_220405	5/04/2022	EB2209940	*<0.02*	*<0.02*	*<0.02*	*<0.03*	*<0.02*	*<0.05*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.06*	*<0.06*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*
MW054S	0861_MW054S_220405	5/04/2022	EB2209940	**0.24**	*<0.02*	*<0.02*	0.08	*<0.02*	**0.16**	*<0.02*	*<0.1*	*<0.02*	0.03	*<0.02*	0.01	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.28
MW055D	0861_MW055D_220401	1/04/2022	EB2209950	0.04	*<0.02*	*<0.02*	0.02	*<0.02*	*0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.04
MW055S	0861_MW055S_220401	1/04/2022	EB2209950	**0.72**	0.06	0.07	0.4	0.02	**0.32**	*<0.02*	*<0.1*	*<0.02*	0.06	*<0.02*	0.03	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.96
MW056I	0861_MW056I_220329	29/03/2022	EB2209946	0.03	*<0.02*	*<0.02*	0.02	*<0.02*	*0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.03
MW056S	0861_MW056S_220329	29/03/2022	EB2209946	*<0.01*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.01*
MW057I	0861_MW057I_220404	4/04/2022	EB2209946	0.01	*<0.02*	*<0.02*	0.01	*<0.02*	*<0.01*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.01*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	0.01
MW057S	0861_MW057S_220404	4/04/2022	EB2209946	**0.67**	0.12	0.09	0.42	*<0.02*	**0.25**	*<0.02*	*<0.1*	0.02	0.09	0.02	0.04	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.05*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	1.05
MW309	0861_MW309_220330	30/03/2022	EB2209950	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.1*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.02*	*<0.06*	*<0.02*	*<0.06*	*<0.06*	*<0.06*	*<0.06*	*<0.02*	*<0.02*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.02*

LOR is limit of reporting
µg/L is micrograms per litre
'-' denotes no analysis undertaken
'<' denotes concentration is less than
NEMP is National Environmental Mangement Plan
NHMRC is National Health Medical Research Council
Denotes first time detection above LOR
Denotes new exceedance of human health guideline values

Property ID	Location ID	Sample Date	Location	DO (PPM or mg/L)	EC (µS/cm)	pH	Er (mV)	Eh (mV)	Temp (°C)	Odour	Sheen	Sample Method/Comments
0861	SW002	28/03/2022	Drain	3.32	195.6	7.18	46.5	251.5	23.3	No odour	No sheen	Grab sample
0861	SW003	28/03/2022	Drain	4.7	245.4	7.42	50.1	255.1	22.4	No odour	No sheen	Grab sample
0861	SW004	29/03/2022	Warrill Creek	5.7	437.1	7.45	49	254	22.7	No odour	No sheen	Grab sample
0861	SW005	29/03/2022	Warrill Creek	6.08	444.1	7.58	65.8	270.8	22.7	No odour	No sheen	Grab sample
0861	SW008	28/03/2022	Drain	4.61	210.5	7.6	55.7	260.7	23	No odour	No sheen	Grab sample
0861	SW009	29/03/2022	Warrill Creek	4.01	280.2	7.22	17.7	222.7	22.5	No odour	No sheen	Grab sample
0861	SW011	28/03/2022	Drain	4.69	211	7.36	72	277	23.8	No odour	No sheen	Grab sample
0861	SW015	29/03/2022	Warrill Creek	5.31	442.4	7.62	30.8	235.8	22.8	No odour	No sheen	Grab sample
0861	SW016	29/03/2022	Warrill Creek	6.53	440.4	7.54	32.9	237.9	22.8	No odour	No sheen	Grab sample
0861	SW018	29/03/2022	Warrill Creek	5.71	433.7	7.72	75.1	280.1	22.8	No odour	No sheen	Grab sample
0861	SW020	29/03/2022	Warrill Creek	5.97	434.2	7.74	80.7	285.7	22.8	No odour	No sheen	Grab sample
0861	SW021	31/03/2022	Drain	4.85	273.5	6.83	69.4	274.4	23.2	No odour	No sheen	Grab sample
0861	SW025	28/03/2022	Bremer River	6.73	654	7.93	54.4	259.4	23.4	No odour	No sheen	Grab sample
0861	SW026	1/04/2022	Warrill Creek	5.68	336.6	7.65	66.3	271.3	23.4	No odour	No sheen	Grab sample
0861	SW027	28/03/2022	Drain	4.56	37.3	6.84	-73.3	131.7	22.2	No odour	No sheen	Grab sample
0861	SW028	29/03/2022	Drain	3.31	141.8	7.06	180.5	385.5	21.1	No odour	No sheen	Grab sample
0861	SW030	28/03/2022	Drain	3.67	153.7	7.24	-4.3	200.7	23.8	No odour	No sheen	Grab sample
0861	SW033	4/04/2022	Drain	8.78	372.3	7.73	-37.5	167.5	27.2	No odour	No sheen	Grab sample
0861	SW034	29/03/2022	Warrill Creek	6.38	432.8	7.67	63.9	268.9	22.8	No odour	No sheen	Grab sample
0861	SW036	1/04/2022	Bremer River	5.8	408	7.4	14.9	219.9	23.1	No odour	No sheen	Grab sample
0861	SW037	30/03/2022	Drain	3.73	205.9	7.02	70.3	275.3	22.4	No odour	No sheen	Grab sample
0861	SW038	30/03/2022	Drain	7.72	52.3	7.45	153.8	358.8	23.9	No odour	No sheen	Grab sample
0861	SW039	28/03/2022	Bremer River	4.6	628	7.73	63.1	268.1	23.6	No odour	No sheen	Grab sample
0861	SW040	28/03/2022	Bremer River	5.84	311.1	7.77	77.1	282.1	23.5	No odour	No sheen	Grab sample
0861	SW041	28/03/2022	Drain	7.86	183	7.86	112	317	22.8	No odour	No sheen	Grab sample
0861	SW043	4/04/2022	Warrill Creek	6.63	3126	7.45	23.4	228.4	23.4	No odour	No sheen	Grab sample
0861	SW045	29/03/2022	Bremer River	5.48	425.6	7.54	53.3	258.3	22.8	No odour	No sheen	Grab sample
0861	SW047	31/03/2022	Bremer River	4.66	373.2	7.63	93.8	298.8	22.6	No odour	No sheen	Grab sample
0861	SW048	28/03/2022	Drain	8.58	20.2	7.86	320	525	23.5	No odour	No sheen	Grab sample
0861	SW049	31/03/2022	Drain	2.59	94.7	6.38	84.7	289.7	23.5	No odour	No sheen	Grab sample
0861	SW050	1/04/2022	Bremer River	6.02	406.2	7.34	75.5	280.5	22.9	No odour	No sheen	Grab sample
0861	SW051	1/04/2022	Bremer River	5.59	405.5	7.35	-74	131	22.4	No odour	No sheen	Grab sample
0861	SW052	31/03/2022	Bremer River	5.75	405.3	7.5	99.2	304.2	22.5	No odour	No sheen	Grab sample
0861	SW053	5/04/2022	Drain	9.8	419.9	8.33	-56.5	148.5	28.1	No odour	No sheen	Grab sample
0861	SW056	28/03/2022	Drain	4.53	205.2	7.09	9.6	214.6	22.6	No odour	No sheen	Grab sample
0861	SW059	28/03/2022	Drain	6.98	105.5	7.4	76.8	281.8	23.7	No odour	No sheen	Grab sample
0861	SW064	4/04/2022	Drain	2.82	245	7.32	103.2	308.2	23.6	No odour	No sheen	Grab sample
0861	SW067	6/04/2022	Drain	-	-	-	-	-	-	No odour	No sheen	Sample location dry.
0861	SW076	28/03/2022	Drain	2.22	222.1	7.13	53.8	258.8	22.3	No odour	No sheen	Grab sample
0861	SW079	5/04/2022	Drain	4.39	308.9	6.89	119.4	324.4	21.9	No odour	No sheen	Grab sample
0861	SW080	5/04/2022	Drain	0.3	464.7	6.84	-79.4	125.6	23.3	No odour	No sheen	Grab sample
0861	SW088	31/03/2022	Bremer River	5.73	406.4	7.53	104.9	309.9	22.6	No odour	No sheen	Grab sample
0861	SW089	31/03/2022	Bremer River	5.91	404.9	7.19	112	317	22.4	No odour	No sheen	Grab sample
0861	SW090	31/03/2022	Bremer River	5.19	402.2	7.42	79.8	284.8	22.6	No odour	No sheen	Grab sample
0861	SW091	31/03/2021	Bremer River	5.92	402.8	7.49	85.2	290.2	22.7	No odour	No sheen	Grab sample
0861	SW094	1/04/2022	Bremer River	6.37	163.6	7.21	-41.9	163.1	25.2	No odour	No sheen	Grab sample
0861	SW098	1/04/2022	Bremer River	5.42	405.1	7.62	67.9	272.9	22.3	No odour	No sheen	Grab sample
0861	SW099	29/03/2022	Warrill Creek	6.04	464	7.7	20.3	225.3	22.7	No odour	No sheen	Grab sample
0861	SW100	29/03/2022	Warrill Creek	6.35	454.4	7.71	35.8	240.8	22.7	No odour	No sheen	Grab sample

Notes
DO - Dissolved Oxygen
EC - Electrical Conductivity
Er - Uncorrected Oxidation Reduction Potential
Eh - Corrected Oxidation Reduction Potential
` - no data
Er converted to Eh by adding 205 based on a YSI with Ag/AgCl sensor calibrated to a 3.5 molar KCL solution
mg/L - milligrams per litre
µS/cm - microsiemens per centimetre
mV - millivolts
°C - degrees Celcius

		PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSE	EtFOSE	MeFOSA	EtFOSA	MeFOSAA	EtFOSAA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.1	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.01
NHMRC (2019) Human Health Recreational Water		**2.0**											**10**																		
NEMP (2018) Freshwater 99% Species Protection							*0.00023*						***19***																		
NEMP (2018) Freshwater 95% Species Protection							**0.13**						*220*																		

Location ID	Sample ID	Sample Date	Lab Report No.																													
SW002	0861_SW002_220328	28/03/2022	EB2209950	1.63	0.1	0.08	0.61	0.03	**1.02**	<0.02	0.2	0.34	0.38	0.16	0.19	0.05	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	3.24
SW003	0861_SW003_220328	28/03/2022	EB2209950	**6.95**	0.86	0.76	3.75	0.17	**3.2**	<0.02	0.3	1.03	1.89	0.42	0.58	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.18	<0.05	<0.05	13.2
SW004	0861_SW004_220329	29/03/2022	EB2209950	0.14	<0.02	<0.02	0.04	<0.02	*0.1*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.14
SW005	0861_SW005_220329	29/03/2022	EB2209950	0.12	<0.02	<0.02	0.02	<0.02	*0.1*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12
SW008	0861_SW008_220328	28/03/2022	EB2209950	0.34	0.03	<0.02	0.12	<0.02	**0.22**	<0.02	<0.1	<0.02	0.04	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.43
SW009	0861_SW009_220329	29/03/2022	EB2209950	1.8	0.14	0.1	0.75	0.03	**1.05**	<0.02	<0.1	0.12	0.24	0.05	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.56
SW011	0861_SW011_220328	28/03/2022	EB2209950	**2.48**	0.13	0.12	0.99	0.06	**1.49**	<0.02	<0.1	0.29	0.39	0.12	0.13	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	1.06	<0.05	<0.05	4.78
SW015	0861_SW015_220329	29/03/2022	EB2209950	0.09	<0.02	<0.02	0.02	<0.02	*0.07*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09
SW016	0861_SW016_220329	29/03/2022	EB2209950	0.07	<0.02	<0.02	0.02	<0.02	*0.05*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07
SW018	0861_SW018_220329	29/03/2022	EB2209950	0.12	<0.02	<0.02	0.05	<0.02	*0.07*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12
SW020	0861_SW020_220329	29/03/2022	EB2209950	0.11	<0.02	<0.02	0.04	<0.02	*0.07*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.11
SW021	0861_SW021_220331	31/03/2022	EB2209950	**21.9**	1.35	1.35	8.6	0.37	**13.3**	<0.05	0.7	1.74	4.58	0.74	1.6	0.05	<0.02	<0.02	<0.02	<0.02	<0.06	0.03	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	34.4
SW025	0861_SW025_220328	28/03/2022	EB2209946	<0.01	<0.02	<0.02	<0.02	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW026	0861_SW026_220401	1/04/2022	EB2209946	0.02	<0.02	<0.02	<0.01	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
SW027	0861_SW027_220328	28/03/2022	EB2209950	**35.5**	1.87	2.32	21.5	1.11	**14**	<0.02	0.4	0.95	4.98	0.48	1.22	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	48.8
SW028	0861_SW028_220329	29/03/2022	EB2209950	0.12	<0.02	<0.02	0.04	<0.02	*0.08*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12
SW030	0861_SW030_220328	28/03/2022	EB2209950	**3.29**	0.18	0.14	1	0.06	**2.29**	<0.02	<0.1	0.12	0.29	0.06	0.09	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.14	<0.05	<0.05	4.37
SW033	0861_SW033_220405	5/04/2022	EB2209950	**60**	3.38	4.96	28.6	0.87	**31.4**	0.67	<1.7	3.17	12.5	1.88	4.52	0.08	<0.05	<0.05	<0.05	<0.05	<0.12	0.24	<0.12	<0.12	<0.12	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	92.3
SW034	0861_SW034_220329	29/03/2022	EB2209950	0.13	<0.02	<0.02	0.05	<0.02	*0.08*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13
SW036	0861_SW036_220401	1/04/2022	EB2209950	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW037	0861_SW037_220330	30/03/2022	EB2209950	**3.02**	0.28	0.23	1.53	0.08	**1.49**	<0.02	<0.1	0.18	0.38	0.07	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.34
SW038	0861_SW038_220330	30/03/2022	EB2209950	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW039	0861_SW039_220328	28/03/2022	EB2209946	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.1	<0.05	<0.05	0.1
SW040	0861_SW040_220328	28/03/2022	EB2209946	0.35	0.03	0.03	0.19	<0.02	**0.16**	<0.02	<0.1	<0.02	0.05	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.14	<0.05	<0.05	0.61
SW041	0861_SW041_220328	28/03/2022	EB2209950	**15.9**	0.98	1.08	7.45	0.51	**8.46**	<0.02	0.2	0.38	1.49	0.24	0.5	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	21.4
SW043	0861_SW043_220404	4/04/2022	EB2209946	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW045	0861_SW045_220329	29/03/2022	EB2209946	0.13	<0.02	<0.02	0.09	<0.02	*0.04*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13
SW047	0861_SW047_220331	31/03/2022	EB2209950	0.01	<0.02	<0.02	<0.01	<0.02	*0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01
SW048	0861_SW048_220328	28/03/2022	EB2209950	0.5	0.03	0.02	0.12	<0.02	**0.38**	<0.02	<0.1	0.02	0.14	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	0.79
SW049	0861_SW049_220331	31/03/2022	EB2209950	0.81	0.03	0.02	0.17	<0.02	**0.64**	<0.02	<0.1	0.02	0.06	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.97
SW050	0861_SW050_220401	1/04/2022	EB2209950	0.01	<0.02	<0.02	<0.01	<0.02	*0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01
SW051	0861_SW051_220401	1/04/2022	EB2209950	0.02	<0.02	<0.02	<0.01	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
SW052	0861_SW052_220331	31/03/2022	EB2209950	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW053	0861_SW053_220406	6/04/2022	EB2209951	0.22	<0.02	<0.02	0.11	<0.02	*0.11*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.22
SW056	0861_SW056_220328	28/03/2022	EB2209950	**5.81**	0.66	0.58	2.99	0.15	**2.82**	<0.02	0.2	0.64	1.4	0.29	0.43	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.16	<0.05	<0.05	10.3
SW059	0861_SW059_220328	28/03/2022	EB2209950	1.58	0.13	0.11	0.66	0.03	**0.92**	<0.02	<0.1	0.15	0.23	0.06	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.36
SW064	0861_SW064_220406	6/04/2022	EB2209951	1.61	0.2	0.14	0.74	<0.02	**0.87**	<0.02	<0.1	<0.1	0.19	0.03	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.21
SW076	0861_SW076_220328	28/03/2022	EB2209950	**7.36**	0.83	0.75	3.72	0.19	**3.64**	<0.02	0.3	0.96	1.78	0.41	0.6	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.28	<0.05	<0.05	13.5
SW079	0861_SW079_220406	6/04/2022	EB2209951	**15.6**	1.23	1.33	8.57	0.46	**7.01**	<0.02	<0.3	0.55	1.94	0.31	0.51	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	22
SW080	0861_SW080_220406	6/04/2022	EB2209951	**36.6**	2.54	3.15	19.8	1.21	**16.8**	<0.02	0.5	1.06	4.14	0.63	1.19	0.03	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	0.14	<0.05	<0.05	51.2
SW088	0861_SW088_220331	31/03/2022	EB2209950	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW089	0861_SW089_220331	31/03/2022	EB2209950	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW090	0861_SW090_220331	31/03/2022	EB2209950	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW091	0861_SW091_220331	31/03/2022	EB2209950	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW094	0861_SW094_220401	1/04/2022	EB2209950	**2.27**	0.19	0.18	1.03	0.05	**1.24**	<0.02	<0.1	0.23	0.4	0.1	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.54
SW098	0861_SW098_220401	1/04/2022	EB2209946	0.02	<0.02	<0.02	<0.01	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
SW099	0861_SW099_220329	29/03/2022	EB2209951	0.07	<0.02	<0.02	0.02	<0.02	*0.05*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07
SW100	0861_SW100_220329	29/03/2022	EB2209951	0.08	<0.02	<0.02	0.02	<0.02	*0.06*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08

LOR is limit of reporting
µg/L is micrograms per litre
'-' denotes no analysis undertaken
'<' denotes concentration is less than
NEMP is National Environmental Mangement Plan
NHMRC is National Health Medical Research Council
Denotes new exceedance of human health guideline values

Property ID	Location ID	Sample Date	Sample Description	Odour	Notes on River Conditions
0861	SD002	28/03/2022	silty CLAY, dark grey	No odour	Manmade drainage channel around 10m width, running west to east. Water is shallow, ~0.1m depth, pooled, clear with bright green algae and aquatic plants. Long grass in channel. Sediment slug to the east of the culvert.
0861	SD003	28/03/2022	silty CLAY, dark grey	No odour	Wide and deep drainage channel, draining north west from the airstrip. Around 40m width and 10m depth. Steep eroded bank to the south west. Heavily vegetated channel with grass, reeds and trees. Reenforced north east bank with large angular boulders.
0861	SD004	29/03/2022	CLAY, brown, grey	No odour	Abundant woody debris in river channel. Eroded southern bank. Brown, flowing water, around 0.5m depth. Flowing west to east. Evidence of flooding (stacked debris).
0861	SD005	29/03/2022	CLAY, brown, grey	No odour	Brown, flowing water (west to east). Appears to be around 0.5m maximum depth. Clear, brown water with fish present. Established riparian vegetation on north bank. Steep eroded southern bank with no riparian vegetation, followed by grassed floodplain to the south. Woody debris within river channel.
0861	SD008	28/03/2022	silty CLAY, dark grey	No odour	Still, pooled water with gently sloping grassed banks. Reeds and grass within channel. Flows west to east. Maximum 1m depth. Maximum 5m width.
0861	SD009	29/03/2022	CLAY, brown, grey	No odour	Slowly flowing, west to east, slightly cloudy, brown water. Around 1m depth, and around 10m width. Vegetated sediment island within creek with established trees and grasses. Woody debris within channel. Fish present. Southern bank issteep and eroded with no vegetation. North bank is gradually sloping.
0861	SD011	28/03/2022	SAND, dark brown	No odour	Shallow, slowly flowing drainage channel. <40 cm maximum depth. No riparian vegetation. Grassed banks. Cobble reenforcement of banks. Aquatic plants in drain.
0861	SD015	29/03/2022	CLAY, brown, grey	No odour	Gently flowing west to east. Slightly cloudy water. ~0.3m depth. Heavily vegetated on north bank with established trees and native grasses. Gently sloping north bank. South bank is steep with visible erosion and less vegetation.
0861	SD016	1/04/2022	silty CLAY	No odour	Still, clear water, brown in colour. Established riparian vegetation on north bank. Woody debris within channel. Fish observed in creek. Rubbish filled embankment ~20m north consists of concrete slabs, construction material, steel debris.
0861	SD018	29/03/2022	CLAY, brown, grey	No odour	Clear, gently flowing water W to E. Approximately 0.3m depth. Wood debris in river channel. Large angular cobbles in channel (~30 cm). Well vegetated on both banks. Creek bed contains native grass vegetation. Lots of rubbish observed, including bottles, concrete, metal, and asbestos. Construction rubble in creek channel.
0861	SD020	29/03/2022	CLAY, brown, grey	No odour	Clear, still water. Heavily vegetated riparian banks to the north and south. Water gently flowing west to east. Water depth maximum 0.3m. Evidence of flooding (debris in trees).
0861	SD021	31/03/2022	clayey GRAVEL, brown	No odour	Shallow, pooled, still water around 0.2m maximum depth. Thick grass and vegetation surrounding sample location.
0861	SD025	28/03/2022	sandy CLAY, brown	No odour	Still pooled water. Flow direction south to north evidenced by debris build up. Black water with small aquatic surface water plants. Depth >1m, width ~20m. Sparcely vegetated banks. Gradual sloping banks (<10°), with steep drop at waters edge.
0861	SD026	29/03/2022	silty CLAY	No odour	Still, pooled, deep water. Very narrow channel, around 2m width. Heavily vegetated banks with native grasses and well established trees. Steep banks. Woody debris within and across the channel. Flow direction south to north.
0861	SD027	28/03/2022	SILT, dark brown	No odour	Heavily modified creek bed. Vegetated with reeds and trees. Flow direction east to west. Manmade cobble embankment to the south. Grassed, eroding bank to the north.
0861	SD028	29/03/2022	CLAY, brown, grey	No odour	Pooled water channel with aquatic plants on the surface. Fish and tadpoles present. Long grass surrounding the channel (~1m high). No riparian vegetation. Relatively flat catchment (<5°) surrounding the channel. Water is black. Unable to see the bottom. Channel is ~ 2m width, and around 0.5m maximum depth. Appears to flow west to east.
0861	SD030	28/03/2022	silty CLAY, gravels, brown	No odour	Drain beside road. Flat land surrounding. Manmade banks. No riparian vegetation. Grassed mown banks.
0861	SD033	1/04/2022	silty CLAY, brown	No odour	Gently flowing east to west. Man made channel capturing runoff from training area and release from new water treatment tanks. Ponds immediatley adjacent to the south. Currently empty. Channel bed contains large angular cobbles and reenforcement wire.
0861	SD034	29/03/2022	CLAY, brown, grey	No odour	Still brown water ~0.3m depth. Heavily vegetated riparian zones on both banks. Native grasses within channel. Rubbish observed in northern bank, including porcelain, glass, and rubber. Narrow drainage channel entering creek from the north to south at sample location.
0861	SD036	1/04/2022	silty CLAY	No odour	Pooled deep water in channel. Unable to see the bottom. Large established gums and trees in channel. Aquatic plants covering entire surface. Western bank vegetated with grass and trees. Eastern bank is gently sloping, vegetated with native grasses. Channel is within a regeneration area.
0861	SD037	30/03/2022	gravelly CLAY, brown grey	No odour	Minimal water <0.1m depth. Still, pooled, and stagnant water. Very shallow drainage channel with mown grassed banks. Tall reeds around 2m high within channel.
0861	SD038	30/03/2022	gravelly CLAY, brown	No odour	Still poolled water >1m depth, ~3m width. Appears to flow west to east (based on the gradient of the land). Large fish observed. Man made embankments with large angular cobble bank reenforcement. Water is clear with a brown/green colour. Aquatic plants on surface. Reeds on banks. Surrounded by open, mown, grassed area.
0861	SD039	28/03/2022	sandy CLAY, brown	No odour	Still pooled water beneath bridge. <0.2m depth. Large subangular boulders and cobbles within channel. Creek bed is vegetated with reeds and grasses and well established trees. Flow direction is S to N evidenced by woody debris within the creek.
0861	SD040	28/03/2022	sandy CLAY, brown	No odour	Large, deep, still dam, with brown coloured water. Around 20m width. Depth >1m. Heavily vegetated banks on both sides. Well established trees and native grasses on both gently sloping banks. Vegetated bank around 50m width on north side. Drainage channel entering the dam from the NW. Sample taken around 2m upstream of drainage channel.
0861	SD041	28/03/2022	sandy CLAY, brown	No odour	Clear, black, pooled, still water. Maximum 0.3m depth. Channel is heavily vegetated with tall reeds. Large angular boulders within channel.
0861	SD043	1/04/2022	silty CLAY, brown	No odour	Clear, flowing creek. Flowing south to north. Erosion channels on eastern bank beneath the bridge. Black cracking clays. Banks are well vegetated. Channel is around 5m width.
0861	SD045	29/03/2022	CLAY, brown, grey	No odour	Still, clear, brown water, flowing west to east. Small aquatic plants on surface. Well vegetated banks on both sides with native grasses and trees.Gently sloping banks with a steep drop off next to sampling point. Woody debris along banks.
0861	SD047	31/03/2022	silty CLAY, brown	No odour	Deep pooled water. Very steep bank on the western side. Channel around 40m width. Vegetated island with well established gums and trees within the river channel.
0861	SD048	28/03/2022	gravelly silty SAND, dark grey	No odour	Drainage leads from hangar to the north ~40m. Land slopes to the south west. Mowed grassed area.
0861	SD049	31/03/2022	silty CLAY, brown	No odour	Large dam at the bottom of a grassy slope. Around 100m diameter. Deep, still, brown water. Aquatic reeds surrounding the banks. Ducks and fish present. Slopes gently from the east to the west.
0861	SD050	1/04/2022	silty CLAY	No odour	Manmade drainage channel around 10m width, running W to E. Water is still and shallow. Around 0.2m depth. Banks are gently sloping and stabilised with large angular boulders. Aquatic plants within channel.
0861	SD051	1/04/2022	silty CLAY, brown	No odour	Deep pooled, still water. Flow direction N to S evidenced by flood debris in trees. Very steep embankment. Channel around 5m width. Green scum covering entire surface. Woody debris within channel. Overland flow across embankments evident with rubbish (corrugated iron) running W to E. Heavily vegetated banks with native grasses, reeds, and trees.
0861	SD052	31/03/2022	silty CLAY, brown	No odour	Still, pooled, deep water. Narrow channel is around 3m width. Entire surface is covered with small aquatic plants. Woody debris in channel. Banks are
0861	SD053	6/04/2022	silty CLAY, brown grey	No odour	Manmade drainage channel surrounding the runway. Water flowing south to north. Very shallow. Concrete base with 4 drains entering channel. Green
0861	SD056	28/03/2022	silty CLAY, dark grey	No odour	Flat surrounding land. Very gently sloping banks. Channel is around 2m maximum width. Depth around 0.2m max. Grassed mown banks. Reeds and aquatic plants within channel. Still, pooled water.
0861	SD059	28/03/2022	gravelly silty CLAY, brown	No odour	Manmade channel. Grassed and mown. Flat surrounding land. Large angular cobbles in drain.
0861	SD064	6/04/2022	silty CLAY, brown	No odour	Very shallow, narrow drainage channel bordering the runway. Mown grassed area surrounding sample location.
0861	SD067	6/04/2022	silty CLAY, brown	No odour	Small drainage channel. Concrete culvert contains dark green water. Culvert is covered with a grill. Very shallow channel. Mown grassed banks. Dry during visit.
0861	SD076	28/03/2022	silty CLAY, dark grey	No odour	Flat surrounding land. Very shallow banks. Channel is around 10m width. Very shallow water flowing east to west (~10cm). Channel vegetated with reeds around 1.5m high.
0861	SD079	6/04/2022	silty CLAY, brown grey	No odour	Manmade drainage channel bordering the runway. 2m high reeds in channel. Very tall reeds in channel. Green and brown algae in channel. No flow. Shallow. Around 0.2m depth. Very gently sloping mown grassed banks.
0861	SD080	6/04/2022	silty CLAY, brown grey	No odour	Manmade drainage channel bordering the runway. 2m high reeds in channel. Sediment build up on the southern side of the culvert. Very gently sloping mown grassed banks.
0861	SD088	31/03/2022	silty CLAY, brown	No odour	Deep, wide channel. Entire surface is covered with small aquatic plants. Gently sloping vegetated banks. Woody debris within channel. Flow direction is west to east.
0861	SD089	31/03/2022	silty CLAY, brown	No odour	Still, pooled, shallow water. Entire surface is covered with small aquatic plants. Woody debris across channel. Fallen trees across the banks. Flow direction is south to north evidenced by flood debris in trees. Very steep banks.
0861	SD090	31/03/2022	silty CLAY, brown	No odour	Still, pooled, deep water. Channel is around 3m width. Entire surface is covered with small aquatic plants. Woody debris in channel. Banks are heavily vegetated. Flow direction is south to north evidenced by flood debris in trees. Very steep banks.
0861	SD091	31/03/2022	silty CLAY, brown	No odour	Still, pooled, clear water. Small aquatic plants on surface. Woody debris within creek channel. Fallen trees across channel. Channel around 3m width. Water around 0.3m depth. Heavily vegetated banks. Banks are fenced off for regeneration. Flow direction is south to north evidenced by flood debris in trees. Very steep banks.
0861	SD094	1/04/2022	silty CLAY	No odour	Shallow, pooled water in creek channel. Not flowing, clear, brown. Large woody debris within channel. Vegetated banks. Steep easterly bank, gently sloping on the west. Western bank is a revegetation area. Flow direction is north to south, evidenced by flood debris within the channel. Drainage channel entering the creek from the northwest to southeast. Heavily eroded.
0861	SD098	1/04/2022	silty CLAY	No odour	Still pooled water beneath bridge. ~0.5m depth. Clear, with a brown colour. Water flow north to south evidenced by debris build up within creek. Film of white/green substance on water surface. Geofab on embankments. Vegetated banks on both sides with native grass and trees.
0861	SD099	29/03/2022	CLAY, brown, grey	No odour	Deep, wide channel. Brown, turbid water. Gently flowing south to north. Woody debris along banks. Grassed bank to the west. Vegetated with well established trees to the east.
0861	SD100	29/03/2022	CLAY, brown, grey	No odour	Deep, narrow channel, gently flowing east to west. Clear, green/brown colour. Flood debris in trees and on banks. Very steep north bank. Long grass and vegetation on south bank.

	PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFAS
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002

Location ID	Sample ID	Sample Date	Lab Report No.																													
SD002	0861_SD002_220328	28/03/2022	EB2209950	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD003	0861_SD003_220328	28/03/2022	EB2209950	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0002
SD004	0861_SD004_220329	29/03/2022	EB2209950	0.0013	<0.0002	<0.0002	<0.0002	<0.0002	0.0013	<0.0062	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	0.0013
SD005	0861_SD005_220329	29/03/2022	EB2209950	0.0025	<0.0006	<0.0005	<0.0005	<0.0005	0.0023	<0.0008	<0.002	<0.0005	<0.0010	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	0.003
SD008	0861_SD008_220328	28/03/2022	EB2209950	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	0.0004
SD009	0861_SD009_220329	29/03/2022	EB2209950	0.0602	0.0007	0.0006	0.0046	0.0005	0.0556	0.0011	<0.001	<0.0004	0.0009	0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	0.0647
SD011	0861_SD011_220328	28/03/2022	EB2209950	0.0009	<0.0002	<0.0002	<0.0002	<0.0002	0.0009	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	0.0009
SD015	0861_SD015_220329	29/03/2022	EB2209950	0.004	<0.0002	<0.0002	0.0004	<0.0002	0.0036	<0.002	<0.001	0.0002	0.0003	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0004	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0048
SD016	0861_SD016_220329	29/03/2022	EB2209950	0.0114	0.0005	0.0006	0.006	<0.0005	0.0054	<0.0018	<0.002	0.0008	0.0023	0.0006	0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.002	0.017
SD018	0861_SD018_220329	29/03/2022	EB2209950	0.028	<0.0002	<0.0002	0.0032	0.0003	0.0248	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	0.0283
SD020	0861_SD020_220329	29/03/2022	EB2209950	0.0037	<0.0002	<0.0002	0.0003	<0.0002	0.0034	0.0009	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	0.0046
SD021	0861_SD021_220331	31/03/2022	EB2209950	0.13	<0.0244	<0.0244	<0.0244	<0.0244	0.13	<0.0244	<0.122	<0.0244	<0.0244	<0.0244	<0.0244	<0.0244	<0.0244	<0.0244	<0.0244	<0.0244	<0.0244	<0.0611	<0.0244	<0.0611	<0.0244	<0.0511	<0.0611	<0.0244	<0.0244	<0.0244	<0.0244	<0.0244	<0.0244	0.13
SD025	0861_SD025_220328	28/03/2022	EB2209946	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD026	0861_SD026_220401	1/04/2022	EB2209946	0.0031	<0.0002	<0.0002	0.0002	<0.0002	0.0029	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0031
SD027	0861_SD027_220328	28/03/2022	EB2209950	0.191	0.0024	0.0036	0.049	0.0043	0.142	<0.0022	<0.005	0.002	0.0086	<0.001	0.0035	<0.001	<0.001	<0.001	<0.003	<0.001	<0.0024	<0.001	<0.0024	<0.001	<0.0024	<0.0024	<0.001	<0.0024	<0.001	<0.001	<0.001	<0.001	0.215
SD028	0861_SD028_220329	29/03/2022	EB2209950	0.0287	<0.0005	<0.0005	0.0016	<0.0005	0.0271	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	0.0287
SD030	0861_SD030_220328	28/03/2022	EB2209950	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD033	0861_SD033_220405	5/04/2022	EB2209950	0.193	0.0012	0.0021	0.0174	0.0012	0.176	0.0189	<0.001	0.0013	0.005	0.0008	0.003	<0.0002	<0.0002	0.0005	0.0006	0.0003	<0.0005	0.0038	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.232
SD034	0861_SD034_220329	29/03/2022	EB2209950	0.0042	<0.0002	<0.0002	0.0003	<0.0002	0.0039	0.001	<0.001	<0.0002	0.0002	<0.0002	0.0003	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	<0.0006	<0.0005	<0.0005	<0.0005	0.0059
SD036	0861_SD036_220401	1/04/2022	EB2209950	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0008	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD037	0861_SD037_220330	30/03/2022	EB2209950	0.149	0.0013	<0.001	0.0139	0.001	0.135	<0.001	<0.005	0.0012	0.0036	<0.001	0.0016	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.0025	<0.0025	<0.001	<0.0025	<0.001	<0.001	<0.001	<0.001	0.158
SD038	0861_SD038_220330	30/03/2022	EB2209950	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD039	0861_SD039_220328	28/03/2022	EB2209946	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD040	0861_SD040_220328	28/03/2022	EB2209946	0.0018	<0.0002	<0.0002	0.0002	<0.0002	0.0016	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0018
SD041	0861_SD041_220328	28/03/2022	EB2209950	0.001	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0012
SD043	0861_SD043_220404	4/04/2022	EB2209946	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD045	0861_SD045_220329	29/03/2022	EB2209946	0.0026	<0.0002	<0.0002	<0.0002	<0.0002	0.0026	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0026
SD047	0861_SD047_220331	31/03/2022	EB2209950	0.0075	<0.0002	<0.0002	0.0005	<0.0002	0.007	0.003	<0.001	0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0114
SD048	0861_SD048_220328	28/03/2022	EB2209950	0.0093	<0.0002	<0.0002	0.0006	<0.0002	0.0087	0.0018	<0.001	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0114
SD049	0861_SD049_220331	31/03/2022	EB2209950	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0002
SD050	0861_SD050_220401	1/04/2022	EB2209950	0.0017	<0.0002	<0.0002	<0.0002	<0.0002	0.0017	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	0.0004	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0018	<0.0005	<0.0005	<0.0005	0.0024
SD051	0861_SD051_220401	1/04/2022	EB2209950	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0004
SD052	0861_SD052_220331	31/03/2022	EB2209950	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.0002	<0.0002	<0.0005	<0.0002	0.0004	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0013
SD053	0861_SD053_220406	6/04/2022	EB2209951	0.0024	<0.0002	<0.0002	0.0004	<0.0002	0.002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0024
SD056	0861_SD056_220328	28/03/2022	EB2209950	1.93	0.0028	0.0029	0.108	0.0604	1.82	0.0038	<0.002	0.0036	0.008	0.0023	0.0155	0.0027	0.0014	0.0021	0.0019	0.0006	<0.0012	0.0019	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	0.0006	<0.0005	2.04
SD059	0861_SD059_220328	28/03/2022	EB2209950	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	0.0026	0.0021	0.463
SD064	0861_SD064_220406	6/04/2022	EB2209951	0.0832	0.0007	0.0006	0.0062	0.0005	0.077	0.0014	<0.001	0.0006	0.0011	0.0002	0.0007	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0892
SD067	0861_SD067_220406	6/04/2022	EB2209951	0.822	0.0057	0.0091	0.0736	0.0056	0.748	0.0233	0.003	0.006	0.0191	0.003	0.0056	0.0033	0.0055	0.0069	0.0092	0.002	0.0012	0.0023	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.932
SD076	0861_SD076_220328	28/03/2022	EB2209950	0.002	<0.0002	<0.0002	<0.0002	<0.0002	0.002	<0.0002	<0.001	<0.0002	<0.0002	<0.0004	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0025
SD079	0861_SD079_220406	6/04/2022	EB2209951	0.196	<0.0005	<0.0005	0.0165	0.0022	0.18	<0.0014	<0.013	<0.0005	0.0011	<0.0005	<0.0008	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.001	<0.0012	<0.0012	<0.0024	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.2
SD080	0861_SD080_220406	6/04/2022	EB2209951	0.392	0.0028	0.004	0.0532	0.0067	0.339	0.0065	<0.002	0.0022	0.0057	0.0016	0.0051	0.0028	0.0035	0.0076	0.0087	0.0035	0.0018	0.0034	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	0.0026	0.0021	0.463
SD088	0861_SD088_220331	31/03/2022	EB2209950	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD089	0861_SD089_220331	31/03/2022	EB2209950	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0002
SD090	0861_SD090_220331	31/03/2022	EB2209950	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.0025	<0.0025	<0.001	<0.0025	<0.0012	<0.001	<0.001	<0.001	<0.001
SD091	0861_SD091_220331	31/03/2022	EB2209950	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD094	0861_SD094_220401	1/04/2022	EB2209950	0.0085	<0.0002	<0.0002	0.0003	<0.0002	0.0082	<0.0002	<0.001	0.0008	0.0005	0.0003	0.0003	0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.011
SD098	0861_SD098_220401	1/04/2022	EB2209946	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0035	<0.0002	<0.001	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0002
SD099	0861_SD099_220329	29/03/2022	EB2209951	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0034	<0.0029	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD100	0861_SD100_220329	29/03/2022	EB2209951	0.003	<0.0002	<0.0002	<0.0002	<0.0002	0.003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.003

LOR is limit of reporting
mg/kg is milligrams per kilogram
µg/kg is micrograms per kilogram
'-' denotes no analysis undertaken
'<' denotes concentration is less than

Appendix C

Analytical Data Validation

Appendix C Analytical Data Validation

DATA VALIDATION REPORT

Project No.:	60612563	**Validation by:** KM	**Date:** 5/05/2022
Client:	Department of Defence		
Site:	Royal Australian Airforce Base, Amberley		
Matrix type:	Groundwater, surface water, sediment	**Data verified by:** JP	**Date:** 10/05/2022
No. of primary samples:	40 groundwater, 48 surface water, 49 sediment		
Laboratory:	ALS (Brisbane), NMI (Sydney)	**Project Manager:** JP	
Lab reference:	EB2209940; EB2209942; EB2209946; EB2209950; EB2209951; AECO06_220411 (RN1349008)		

Key Issues:	No key QA/QC issues were identified in the field or laboratory datasets that could have a material implication on data interpretation and therefore decision-making on the project. The data are considered appropriate for use to meet the project objectives.

Field QA/QC

Sampling personnel	Sampling was conducted by AECOM environmental scientists between 28 March and 7 April 2022.
Sampling Methodology	Samples were collected using appropriate methods as identified within the main body of the report and as presented in the SAQP. Sediment samples were collected as grab samples using a clean nitrile glove rather than using a trenching shovel or piston sampler. The different technique is not expected to impact sample quality. Field parameters were measure using a water quality meter prior to sample collection. The probe on the water quality meter was decontaminated prior to use. The SAQP does not specify whether field parameters should be collected before or after sample collection. The method used is not expected to impact sample collection.
Chain of Custody	COC documents completed as per AECOM procedures.
Rinsate Blank	Rinsate blank samples were collected at a frequency of one per day of sampling where appropriate (nine in total) during the monitoring between 28 March to 7 April 2022. Rinsates were collected from the decontaminated interface probe. Concentrations reported below the LOR for all analytes tested. See Table C1.
Field Blanks	Field blank samples were collected at a frequency of one per day of sampling (nine in total between 28 March to 7 April 2022) by filling sample containers with laboratory supplied deionised water in the field. All field blanks reported concentrations below the LOR for the analytes tested. See Table C1.
Trip Blanks	Trip blank samples were present during the transport of samples during the sampling between 28 March to 7 April 2022 for the primary laboratory samples. Two water trip blanks and two soil trip blanks all reported concentrations below the LOR, see Table C2.
Frequency of field QC	Field duplicate (inter-laboratory duplicates) and triplicates (inter-laboratory duplicates) were collected. There were five duplicates/triplicate sets for groundwater, surface water and sediment (see Tables C3, C4 and C5). The frequency of field QC achieves the expected frequency for each media type. The target frequency of one in ten primary samples was achieved for all matrices.

Handling and preservation	Primary, duplicate and triplicate samples were received preserved and chilled at the laboratory. All samples were received at the laboratory in appropriate sample containers with no sample container non-compliances noted.
Laboratory QA/QC	
Tests requested/reported	Samples were analysed and reported as requested on the COC.
Holding time compliance	Samples were extracted and analysed within recommended holding times.
Laboratory Accreditation	The laboratory analysis was conducted by ALS Environmental Pty Ltd (Brisbane) a National Association of Testing Authorities (NATA) accredited laboratory. The triplicate samples were analysed at the National Measurement Institute (Sydney), also a NATA accredited laboratory.
Frequency of laboratory QC	The laboratory reported a sufficient frequency of quality control samples to assess whether the results have been reported to an acceptable accuracy and precision, except: • Matrix spikes and laboratory duplicates (water) for PFAS (both 0.00%) which is below the expected rate of 5.0% (for matrix spikes) and 10.00% (duplicates) in EB2209942 (38 samples in batch). • EB2209942 - laboratory duplicates (water) for PFAS (0.00%) which is below the expected rate of 10.00%. Matrix spikes (water) for PFAS (0.00%) was below the expected rate of 5.0%. • EB2209946- laboratory duplicates (water) for PFAS (6.67%) which is below the expected rate of 10.00%. • EB2209950 -Laboratory duplicates (water) for PFAS (7.35%) which is below the expected rate of 10.00% in the batch. Matrix spikes (water) for PFAS (4.41%) which is below the expected rate of 5.00%. (68 samples in batch) • EB2209940 - Laboratory duplicates (water) and matrix recoveries for PFAS (8.33% and 0.00%) which is below the expected rates of 10.00% and 5.0%, respectively, in the batch (12 samples in batch) • EB2209951- Laboratory duplicates (water) for PFAS (6.90%) which is below the expected rate of 10.00% in the batch (29 samples in batch) • EB2209951- Matrix spikes (water) for PFAS (3.45%) which is below the expected rate of 5.00% in the batch (29 samples in batch). The reason for insufficient matrix spikes and laboratory duplicates is unknown as the laboratory was provided with sufficient sample volume across the project batches, however as all other QC results met control limits this is not expected to impact data quality.
Method Blank	No method blank non-compliances were reported.
Laboratory duplicate RPDs	Laboratory duplicate Relative Percentage Differences (RPD) were within control limits for all samples.
Laboratory control spike recovery	All Laboratory Control Spikes (LCS) recoveries (where reported) were within control limits, except: • EB2209942 (soil): LCS recovery for PFPeS, PFHpS, PFBA, PFTeDA, MeFOSE, EtFOSE and 10:2 FTS in lab sample QC-4279450-002 was greater than the upper control limit. • EB2209946 (soil): LCS recovery for PFPeS, PFHpS, PFBA, PFTeDA, MeFOSE, ETFOSE and 10:2 FTS in lab sample QC-4284050-002 was greater than the upper control limit. • EB2209946 (water): LCS recovery for PFHpS, PFTeDA, MeFOSAA, 8:2 FTS and 10:2 FTS in lab sample QC-4284050-002 was greater than the upper control limit. • EB2209951 (soil): LCS recovery for PFPeS, PFHpS, PFBA, PFTeDA, MeFOSE, EtFOSE and 10:2 FTS in lab sample QC-4279450-002 was greater than the upper control limit.

	• EB2209951 (water): LCS recovery for PFTeDA, MeFOSAA and EtFOSAA in lab sample QC-4281165-002 was greater than the upper control limit. LCS are known, interference free matrix spiked with target analytes or certified reference material. The purpose of this quality control type is to monitor precision and accuracy independent of sample matrix and to indicate if the analytical procedure is in control and evaluates the laboratory capability to report unbiased results. Although some non-conformances have been detected in a small number QC samples, the non-conformances do not include the key analytes, PFHxS and PFOS so the understanding of the concentrations of these compounds is not impacted.
Matrix spike recovery	All matrix spike (MS) recoveries (where reported) were within control limits, except: • EB2209946 (water): MS recovery for PFTeDA and MeFOSAA in lab sample EB2209946-018 was greater than the upper data quality objective. • EB2209950 (soil): MS recovery for PFHxS and PFOS in lab samples EB2209950-003 and EB2209950-045 could not be determined as the background level was greater than or equal to four times the spike level. MS recovery for PFDS, PFBA, PFNA, PFUnDA, PFTrDA, PFTeDA, FOSA, MeFOSA, EtFOSA, MeFOSE, EtFOSE, MeFOSAA, EtFOSAA, 4:2 FTS, 6:2 FTS and 8:2 FTS in lab sample EB2209950-045 was less than the lower data quality objective. • EB2209950 (water): MS recovery for PFHxS in lab sample EB2209950-047 and PFOS in lab samples EB2209950--014 and EB2209950--047 could not be determined as the background level was greater than or equal to four times the spike level. • EB2209951 (soil): MS recovery for PFHxS and PFOS in lab samples -45 was not determined as the background level was greater or equal to 4 x spike level. MS recovery for PFDS, PFBA, PFNA, PFUnDA, PFTrDA, PFTeDA in sample -045 was less than the lower data quality objective for 16 compounds. • EB2209951 (water): MS recovery for PFHxS and PFOS in lab sample EB2209951--013 could not be determined as the background level was greater than or equal to four times the spike level. This indicates that matrix interference may have occurred in isolated samples. These non-conformances are not expected to impact data quality.
Surrogate spike recovery	Surrogate spike recoveries were within control limits for all samples.
QA/QC Data Evaluation	
Comparison of Field Observations and Laboratory Results	No anomalous results between field observations and analysis results were noted.
Data transcription	A random 10% check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by AECOM.
Limits of reporting	Limits of Reporting (LORs) were sufficiently low to enable assessment against adopted screening levels except for PFOS for NEMP (HEPA, 2020) ecological guideline values for the 99% protection of freshwater species. The potential exists for concentrations of PFOS to be above the adopted guideline, but below the laboratory LOR. This should be taken into consideration when interpreting and using this data quantitatively where results are reported below LOR.
Field QAQC RPDs	RPDs for groundwater surface water and sediment samples are reported in Tables C3, C4 and C5 respectively. Field duplicate and triplicate RPDs were reported within control limits for all groundwater, surface water and sediment samples except the following (the sample with the higher concentration is in bold). • 0861_MW047_220330 and **0861_QC172_220330** for PFBS (55%), PFHpS (164%), PFHpA (161%), PFHxA (90%), PFPeS (127%), PFPeA (46%), PFOS (179%), PFOA (173%) and PFHxS (136%) • 0861_MW047_220330 and **0861_QC272_220330** for PFHpS (149%), PFHpA (135%), PFHxA (72%), PFPeS (86%), PFOS (165%), PFOA (159%) and PFHxS (130%)

	• **0861_MW057S_220404** and 0861_QC279_220404 for PFOS (70%) • 0861_SD002_220328 and **0861_QC167_220328** for PFOS (194%) • 0861_SD094_220401 and **0861_QC277_220401** for PFOS (70%) • **0861_SW003_220328** and 0861_QC168_220328 for PFOA (34%) • **0861_SW003_220328** and 0861_QC268_220328 for PFBS (39%), PFHpA (33%), PFHxA (37%), PFPeS (39%), PFOS (67%), PFOA (34%) and PFHxS (56%) • **0861_SW064_220406** and 0861_QC280_220406 for PFOS (37%) The RPD non-conformances are likely to be due to lack of mixing of samples, different extraction techniques used by the primary and secondary laboratories and heterogeneity in the solid samples. Where the QC samples highlighted above reported a higher concentration than the primary sample, the higher QC sample concentrations do not constitute a first-time detection of PFOA or PFHxS+PFOS or a new maximum of the same concentrations except for: • 0861_MW047_220330 and **0861_QC172_220330** where a new maximum of PFOA (2.37µg/L) and PFHxS + PFOS (71.1µg/L) was reported. Therefore, the elevated RPDs are not considered to affect data interpretation for use in this report. The higher concentration has however conservatively been adopted in the report tables. All remaining samples reported within the control limits.
Other	
Other observations	No other key observations were identified in the field or laboratory datasets that could have a material implication on data interpretation and therefore decision-making on the project.

Table C1 Field Blank and Rinsate Blank Analytical Results

	Lab Report	EB2209942	EB2209942	EB2209942	EB2209942	EB2209942	EB2209942	EB2209942	EB2209942	EB2209942	EB2209942	EB2209942	EB2209942	EB2209942	EB2209942	EB2209942	EB2209942
	Field ID	0861_QC450_220328	0861_QC451_220328	0861_QC452_220328	0861_QC453_220331	0861_QC454_220401	0861_QC455_220404	0861_QC456_220405	0861_QC457_220406	0861_QC458_220407	0861_QC345_220328	0861_QC346_220329	0861_QC347_220330	0861_QC348_220331	0861_QC349_220401	0861_QC350_220404	
	Sampled Date	28/03/2022	29/03/2022	30/03/2022	31/03/2022	1/04/2022	4/04/2022	5/04/2022	6/04/2022	7/04/2022	28/03/2022	29/03/2022	30/03/2022	31/03/2022	1/04/2022	4/04/2022	
	Sample Type	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	
Analyte	**Units**	**EQL**															
10:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 FtS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EtFOSA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EtFOSAA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
EtFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MeFOSA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MFOSAA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MeFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PFBS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFBA	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
PFDS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFDoDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHpS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHpA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHxA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFNA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
FOSA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFPeS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFPeA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFTeDA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PFTrDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFUnDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFOA	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFHxS	µg/L	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Table C1 Field Blank and Rinsate Blank Analytical Results

Lab Report		EB2209942	EB2209942	EB2209942
Field ID		0861_QC351_220405	0861_QC352_220406	0861_QC353_220407
Sampled Date		5/04/2022	6/04/2022	7/04/2022
Sample Type		Rinsate	Rinsate	Rinsate
Analyte	**Units**	**EQL**		
10:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05
4:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05
6:2 FtS	µg/L	0.05	<0.05	<0.05	<0.05
8:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05
EtFOSA	µg/L	0.05	<0.05	<0.05	<0.05
EtFOSAA	µg/L	0.02	<0.02	<0.02	<0.02
EtFOSE	µg/L	0.05	<0.05	<0.05	<0.05
MeFOSA	µg/L	0.05	<0.05	<0.05	<0.05
MFOSAA	µg/L	0.02	<0.02	<0.02	<0.02
MeFOSE	µg/L	0.05	<0.05	<0.05	<0.05
PFBS	µg/L	0.02	<0.02	<0.02	<0.02
PFBA	µg/L	0.1	<0.1	<0.1	<0.1
PFDS	µg/L	0.02	<0.02	<0.02	<0.02
PFDA	µg/L	0.02	<0.02	<0.02	<0.02
PFDoDA	µg/L	0.02	<0.02	<0.02	<0.02
PFHpS	µg/L	0.02	<0.02	<0.02	<0.02
PFHpA	µg/L	0.02	<0.02	<0.02	<0.02
PFHxA	µg/L	0.02	<0.02	<0.02	<0.02
PFNA	µg/L	0.02	<0.02	<0.02	<0.02
FOSA	µg/L	0.02	<0.02	<0.02	<0.02
PFPeS	µg/L	0.02	<0.02	<0.02	<0.02
PFPeA	µg/L	0.02	<0.02	<0.02	<0.02
PFTeDA	µg/L	0.05	<0.05	<0.05	<0.05
PFTrDA	µg/L	0.02	<0.02	<0.02	<0.02
PFUnDA	µg/L	0.02	<0.02	<0.02	<0.02
PFOS	µg/L	0.01	<0.01	<0.01	<0.01
PFOA	µg/L	0.01	<0.01	<0.01	<0.01
PFHxS	µg/L	0.02	<0.01	<0.01	<0.01

Lab Report Number	EB2209942	EB2209942	EB2209942	EB2209942
Field ID	0861_QC523_220328	0861_QC524_220330	0861_QC525_280322	0861_QC526_220330
Sampled_Date	28/03/2022	30/03/2022	28/03/2022	30/03/2022
Sample Type	Trip Blank (Water)	Trip Blank (Water)	Trip Blank (Soil)	Trip Blank (Soil)

Analyte	Units	EQL				
10:2 FTS	mg/kg	0.0005	-	-	<0.0005	<0.0005
4:2 FTS	mg/kg	0.0005	-	-	<0.0005	<0.0005
6:2 FtS	mg/kg	0.0005	-	-	<0.0005	<0.0005
8:2 FTS	mg/kg	0.0005	-	-	<0.0005	<0.0005
EtFOSA	mg/kg	0.0005	-	-	<0.0005	<0.0005
EtFOSAA	mg/kg	0.0002	-	-	<0.0002	<0.0002
EtFOSE	mg/kg	0.0005	-	-	<0.0005	<0.0005
MeFOSA	mg/kg	0.0005	-	-	<0.0005	<0.0005
MFOSAA	mg/kg	0.0002	-	-	<0.0002	<0.0002
MeFOSE	mg/kg	0.0005	-	-	<0.0005	<0.0005
PFBS	mg/kg	0.0002	-	-	<0.0002	<0.0002
PFBA	mg/kg	0.001	-	-	<0.001	<0.001
PFDS	mg/kg	0.0002	-	-	<0.0002	<0.0002
PFDA	mg/kg	0.0002	-	-	<0.0002	<0.0002
PFDoDA	mg/kg	0.0002	-	-	<0.0002	<0.0002
PFHpS	mg/kg	0.0002	-	-	<0.0002	<0.0002
PFHpA	mg/kg	0.0002	-	-	<0.0002	<0.0002
PFHxA	mg/kg	0.0002	-	-	<0.0002	<0.0002
PFNA	mg/kg	0.0002	-	-	<0.0002	<0.0002
FOSA	mg/kg	0.0002	-	-	<0.0002	<0.0002
PFPeS	mg/kg	0.0002	-	-	<0.0002	<0.0002
PFPeA	mg/kg	0.0002	-	-	<0.0002	<0.0002
PFTeDA	mg/kg	0.0005	-	-	<0.0005	<0.0005
PFTrDA	mg/kg	0.0002	-	-	<0.0002	<0.0002
PFUnDA	mg/kg	0.0002	-	-	<0.0002	<0.0002
Sum of PFAS	mg/kg	0.0002	-	-	<0.0002	<0.0002
Sum of PFHxS and PFOS	mg/kg	0.0002	-	-	<0.0002	<0.0002
PFOS	mg/kg	0.0002	-	-	<0.0002	<0.0002
PFOA	mg/kg	0.0002	-	-	<0.0002	<0.0002
PFHxS	mg/kg	0.0002	-	-	<0.0002	<0.0002
10:2 FTS	µg/L	0.01	<0.05	<0.05	-	-
4:2 FTS	µg/L	0.01	<0.05	<0.05	-	-
6:2 FtS	µg/L	0.01	<0.05	<0.05	-	-
8:2 FTS	µg/L	0.01	<0.05	<0.05	-	-
EtFOSA	µg/L	0.02	<0.05	<0.05	-	-
EtFOSAA	µg/L	0.01	<0.02	<0.02	-	-
EtFOSE	µg/L	0.05	<0.05	<0.05	-	-
MeFOSA	µg/L	0.02	<0.05	<0.05	-	-
MFOSAA	µg/L	0.01	<0.02	<0.02	-	-
MeFOSE	µg/L	0.05	<0.05	<0.05	-	-
PFBS	µg/L	0.01	<0.02	<0.02	-	-
PFBA	µg/L	0.05	<0.1	<0.1	-	-
PFDS	µg/L	0.01	<0.02	<0.02	-	-
PFDA	µg/L	0.01	<0.02	<0.02	-	-
PFDoDA	µg/L	0.01	<0.02	<0.02	-	-
PFHpS	µg/L	0.01	<0.02	<0.02	-	-
PFHpA	µg/L	0.01	<0.02	<0.02	-	-
PFHxA	µg/L	0.01	<0.02	<0.02	-	-
PFNA	µg/L	0.01	<0.02	<0.02	-	-
FOSA	µg/L	0.01	<0.02	<0.02	-	-
PFPeS	µg/L	0.01	<0.02	<0.02	-	-
PFPeA	µg/L	0.02	<0.02	<0.02	-	-
PFTeDA	µg/L	0.02	<0.05	<0.05	-	-
PFTrDA	µg/L	0.02	<0.02	<0.02	-	-
PFUnDA	µg/L	0.01	<0.02	<0.02	-	-
Sum of PFAS	µg/L	0.01	<0.01	<0.01	-	-
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	-	-
PFOS	µg/L	0.01	<0.01	<0.01	-	-
PFOA	µg/L	0.01	<0.01	<0.01	-	-
PFHxS	µg/L	0.01	<0.01	<0.01	-	-

Table C3 Groundwater Duplicate and Triplicate Analytical Results

		Lab Report Number	EB2209946	EB2209942	RPD	RN1349008	RPD	EB2209950	EB2209942	RPD	RN1349008	RPD	EB2209950	EB2209942	RPD	RN1349008	RPD	EB2209946	EB2209942	RPD	RN1349008	RPD
		Field ID	0861_MW056S_220329	0861_QC171_220329		0861_QC271_220329		0861_MW047_220330	0861_QC172_220330		0861_QC272_220330		0861_MW044_220401	0861_QC176_220401		0861_QC276_220401		0861_MW057S_220404	0861_QC179_220404		0861_QC279_220404	
		Sampled Date	29/03/2022	29/03/2022		29/03/2022		30/03/2022	30/03/2022		30/03/2022		1/04/2022	1/04/2022		1/04/2022		4/04/2022	4/04/2022		4/04/2022	
		Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Analyte	**Units**	**EQL**																				
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	0.06	<0.05	18	0.032	61	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	0.015	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.12	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.044	75	<0.02	<0.05	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
EtFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.12	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.12	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.039	64	<0.02	<0.05	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
MeFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.12	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
PFBS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	**0.86**	**1.51**	55	1.1	24	<0.02	<0.02	0	<0.01	0	0.12	0.14	15	0.099	19
PFBA	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	0.3	0.4	29	0.3	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.05	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.05	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.017	0	<0.02	<0.05	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFHpS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	**0.16**	**1.64**	164	**1.1**	149	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFHpA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	**0.1**	**0.93**	161	**0.52**	135	<0.02	<0.02	0	<0.01	0	0.02	<0.02	0	0.013	42
PFHxA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	**1.03**	**2.73**	90	**2.2**	72	<0.02	<0.02	0	<0.01	0	0.09	0.1	11	0.077	16
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	0.08	120	0.035	55	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.05	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFPeS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	**0.64**	**2.88**	127	**1.6**	86	<0.02	<0.02	0	<0.01	0	0.09	0.12	29	0.075	18
PFPeA	µg/L	0.02	<0.02	<0.02	0	<0.02	0	**0.4**	**0.64**	46	0.52	26	<0.02	<0.02	0	<0.02	0	0.02	0.03	40	0.021	5
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	0.02	0	<0.05	<0.12	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
PFTrDA	µg/L	0.02	<0.02	<0.02	0	<0.02	0	<0.02	<0.05	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.05	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFOS	µg/L	0.01 : 0.02 (Interlab)	<0.01	<0.01	0	<0.02	0	**2.84**	**50.2**	179	**30**	165	<0.03	0.02	0	<0.02	0	**0.25**	0.28	11	**0.12**	70
PFOA	µg/L	0.01	<0.01	<0.01	0	<0.01	0	**0.17**	**2.37**	173	**1.5**	159	<0.01	<0.01	0	<0.01	0	0.04	0.05	22	0.023	54
PFHxS	µg/L	0.01	<0.01	<0.01	0	<0.01	0	**4.01**	**20.9**	136	**19**	130	0.01	<0.01	0	<0.01	0	0.42	0.48	13	0.38	10

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Table C3 Groundwater Duplicate and Triplicate Analytical Results

		Lab Report Number	EB2209951	EB2209942	RPD	RN1349008	RPD
		Field ID	0861_MW033_220406	0861_QC181_220406		0861_QC281_220406	
		Sampled Date	6/04/2022	6/04/2022		6/04/2022	
		Sample Type	Primary	Duplicate		Triplicate	
Analyte	**Units**	**EQL**					
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
EtFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
MeFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0
PFBS	µg/L	0.02 : 0.01 (Interlab)	<0.04	<0.02	0	<0.01	0
PFBA	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
PFHpS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
PFHpA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
PFHxA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
PFPeS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
PFPeA	µg/L	0.02	<0.02	<0.02	0	<0.02	0
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0
PFTrDA	µg/L	0.02	<0.02	<0.02	0	<0.02	0
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
PFOS	µg/L	0.01 : 0.02 (Interlab)	<0.04	0.02	0	<0.02	0
PFOA	µg/L	0.01	<0.01	<0.01	0	<0.01	0
PFHxS	µg/L	0.01	<0.01	<0.01	0	<0.01	0

Table C4 Surface Water Duplicate and Triplicate Analytical Results

		Lab Report Number	EB2209950	EB2209942		RN1349008		EB2209946	EB2209942		RN1349008		EB2209950	EB2209942		RN1349008		EB2209950	EB2209942		RN1349008		EB2209951
		Field ID	0861_SW003_220328	0861_QC168_220328	RPD	0861_QC268_220328	RPD	0861_SW039_220328	0861_QC169_220328	RPD	0861_QC269_220328	RPD	0861_SW088_220331	0861_QC175_220331	RPD	0861_QC275_220331	RPD	0861_SW036_220401	0861_QC178_220401	RPD	0861_QC278_220401	RPD	0861_SW064_220406
		Sampled Date	28/03/2022	28/03/2022		28/03/2022		28/03/2022	28/03/2022		28/03/2022		31/03/2022	31/03/2022		31/03/2022		1/04/2022	1/04/2022		1/04/2022		6/04/2022
		Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary
Analyte	**Units**	**EQL**																					
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	0.18	0.16	12	0.12	40	0.1	0.29	97	<0.01	164	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.06
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.039	64	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02
EtFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.06
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.06
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.027	30	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02
MeFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.06
PFBS	µg/L	0.02 : 0.01 (Interlab)	**0.86**	0.71	19	**0.58**	39	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	0.2
PFBA	µg/L	0.1 : 0.05 (Interlab)	0.3	0.4	29	0.34	13	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.014	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.032	46	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02
PFHpS	µg/L	0.02 : 0.01 (Interlab)	0.17	0.2	16	0.084	68	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02
PFHpA	µg/L	0.02 : 0.01 (Interlab)	**0.42**	0.46	9	**0.3**	33	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	0.03
PFHxA	µg/L	0.02 : 0.01 (Interlab)	**1.89**	1.69	11	**1.3**	37	<0.02	0.03	40	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	0.19
PFNA	µg/L	0.02 : 0.01 (Interlab)	0.03	0.03	0	0.024	22	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.014	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02
PFPeS	µg/L	0.02 : 0.01 (Interlab)	0.76	0.84	10	**0.51**	39	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	0.14
PFPeA	µg/L	0.02	1.03	1	3	0.81	24	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.1
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	0.039	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.06
PFTrDA	µg/L	0.02	<0.02	<0.02	0	0.042	71	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	0.014	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02
PFOS	µg/L	0.01 : 0.02 (Interlab)	**3.2**	2.94	8	**1.6**	67	<0.01	<0.01	0	<0.02	0	<0.01	<0.01	0	<0.02	0	<0.01	<0.01	0	<0.02	0	**0.87**
PFOA	µg/L	0.01	**0.58**	**0.41**	34	**0.34**	52	<0.01	<0.01	0	<0.01	0	<0.01	<0.01	0	<0.01	0	<0.01	<0.01	0	<0.01	0	0.04
PFHxS	µg/L	0.01	**3.75**	3.12	18	**2.1**	56	<0.01	<0.01	0	<0.01	0	<0.01	<0.01	0	<0.01	0	<0.01	<0.01	0	<0.01	0	0.74

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Table C4 Surface Water Duplicate and Triplicate Analytical Results

		Lab Report Number	EB2209942	RPD	RN1349008	RPD
		Field ID	0861_QC180_220406		0861_QC280_220406	
		Sampled Date	6/04/2022		6/04/2022	
		Sample Type	Duplicate		Triplicate	
Analyte	**Units**	**EQL**				
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	0	<0.01	0
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	0	<0.01	0
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	<0.05	0	<0.01	0
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	0	<0.01	0
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	0	<0.02	0
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	0	<0.01	0
EtFOSE	µg/L	0.05	<0.05	0	<0.05	0
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	0	<0.02	0
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	0	<0.01	0
MeFOSE	µg/L	0.05	<0.05	0	<0.05	0
PFBS	µg/L	0.02 : 0.01 (Interlab)	0.24	18	0.14	35
PFBA	µg/L	0.1 : 0.05 (Interlab)	<0.1	0	0.069	0
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	0	<0.01	0
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	0	<0.01	0
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	0	<0.01	0
PFHpS	µg/L	0.02 : 0.01 (Interlab)	0.03	40	0.013	0
PFHpA	µg/L	0.02 : 0.01 (Interlab)	<0.02	40	0.015	67
PFHxA	µg/L	0.02 : 0.01 (Interlab)	0.18	5	0.12	45
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	0	<0.01	0
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	0	<0.01	0
PFPeS	µg/L	0.02 : 0.01 (Interlab)	0.15	7	0.097	36
PFPeA	µg/L	0.02	0.08	0	0.054	0
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	0	<0.02	0
PFTrDA	µg/L	0.02	<0.02	0	<0.02	0
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	0	<0.01	0
PFOS	µg/L	0.01 : 0.02 (Interlab)	0.75	15	**0.6**	37
PFOA	µg/L	0.01	0.04	0	0.024	50
PFHxS	µg/L	0.01	0.72	3	0.55	29

Table C5 Sediment Duplicate and Triplicate Analytical Results

		Lab Report Number	EB2209950	EB2209942		RN1349008		EB2209946	EB2209942		RN1349008		EB2209950	EB2209942		RN1349008		EB2209950	EB2209942		RN1349008		EB2209950	EB2209942		RN1349008	
		Field ID	0861_SD002_220328	0861_QC167_220328	RPD	0861_QC267_220328	RPD	0861_SD025_220328	0861_QC170_220328	RPD	0861_QC270_220328	RPD	0861_SD049_220331	0861_QC173_220331	RPD	0861_QC273_220331	RPD	0861_SD088_220331	0861_QC174_220331	RPD	0861_QC274_220331	RPD	0861_SD094_220401	0861_QC177_220401	RPD	0861_QC277_220401	RPD
		Sampled Date	28/03/2022	28/03/2022		28/03/2022		28/03/2022	28/03/2022		28/03/2022		31/03/2022	31/03/2022		31/03/2022		31/03/2022	31/03/2022		31/03/2022		1/04/2022	1/04/2022		1/04/2022	
		Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Analyte	**Units**	**EQL**																									
10:2 FTS	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0
4:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0
6:2 FtS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0
8:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0
EtFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0
EtFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0
EtFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
MeFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0
MFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	0.0002	<0.0002	0	<0.002	0
MeFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0
PFBS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0
PFBA	mg/kg	0.001	<0.001	<0.001	0	<0.002	0	<0.001	<0.001	0	<0.002	0	<0.001	<0.001	0	<0.002	0	<0.001	<0.001	0	<0.002	0	<0.001	<0.001	0	<0.002	0
PFDS	mg/kg	0.0002	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0
PFDA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	0.0002	<0.0003	0	<0.001	0
PFDoDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	0.0005	86	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0
PFHpS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0
PFHpA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	0.0003	0.0004	29	<0.001	0
PFHxA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	0.0004	67	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	0.0005	0.0007	33	<0.001	0
PFNA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	0.0002	0.0002	0	<0.001	0
FOSA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0
PFPeS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	0	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0
PFPeA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	0.0005	86	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	0.0008	0.0008	0	<0.002	0
PFTeDA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0
PFTrDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0
PFUnDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0
PFOS	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	**0.0125**	**194**	0.018	196	<0.0002	<0.0002	0	<0.002	0	0.0002	0.0003	40	<0.002	0	<0.0002	<0.0002	0	<0.002	0	**0.0082**	0.0103	23	**0.017**	**70**
PFOA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	0.0004	67	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	0.0003	0.0004	29	<0.001	0
PFHxS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	0.001	133	0.0014	150	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	0.0003	0.0006	67	<0.001	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Appendix D

Chain of Custody Forms

Appendix D Chain of Custody Forms

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name: NMI Laboratory Services

Lab. Address: 105 Delhi Rd, Riverside Corporate Park, NORTH RYDE NSW 2113

Contact Name: Susanne Neuman

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No:

Sampled By: [redacted]

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No:

Specifications: Please report in ESdat format

SEPARATE WORK ORDER PER COC

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)		EA025H (TSS)	EP002 (DOC)	NT-1 (Cations)	NT-2			HOLD	Notes
N22/006491	0861_QC267_220328	28/03/2022	x							1P	X									
N22/006492	0861_QC268_220328	28/03/2022		x						2P	X									
N22/006493	0861_QC269_220328	28/03/2022		x						2P	X									
N22/006494	0861_QC270_220328	28/03/2022	x							1P	X									
N22/006495	0861_QC271_220329	29/03/2022		x						2P	X									
N22/006496	0861_QC272_220330	30/03/2022		x						2P	X									
N22/006497	0861_QC273_220331	31/03/2022	x							1P	X									
N22/006498	0861_QC274_220331	31/03/2022	x							1P	X									
N22/006499	0861_QC275_220331	31/03/2022		x						2P	X									
N22/006500	0861_QC276_220401	1/04/2022		x						2P	X									
N22/006501	0861_QC277_220401	1/04/2022	x							1P	X									
N22/006502	0861_QC278_220401	1/04/2022		x						2P	X									
N22/006503	0861_QC279_220404	4/04/2022		x						2P	X									
N22/006504	0861_QC280_220406	6/04/2022		x						2P	X									
N22/006505	0861_QC281_220406	6/04/2022		x						2P	X									

RECEIVED
11 APR 2022
BY: AO 9:00

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No Esky ID

Relinquished by: [redacted] Date: 8/4/22

Received by: Signed: Date:

Relinquished by: Signed: Date:

Received by: Signed: Date:

AECOM 220411 AO

19/4

C

Offsite

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
1	0861_MW054S_220405	5/4/22		✓						2	X		
2	0861_MW054D_220405	"		✓						2	X		
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Environmental Division
Brisbane
Work Order Reference
EB2209940

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted] Date: 7/4/22
Received by: [redacted] Date: 7/4/22 1400

Relinquished by: Signed: Date:
Received by: Signed: Date:

QC

AECOM — **Chain of Custody** — COC Page 1 of 4

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no. :

Specifications: Please report in ESdat format	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Environmental Division Brisbane
Work Order Reference
EB2209942

[redacted]

Telephone : +61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)
1	0861_QC167_220328	28/3/22	✓							2 1	X
NK	~~0861_QC267_220328~~	"	✓							2 1	
2	0861_QC168_220328	"		✓						2	X
NK	~~0861_QC268_220328~~	"		✓						2	
3	0861_QC169_220328	"		✓						2	X
NK	~~0861_QC269_220328~~	"		✓						2	
4	0861_QC170_220328	"	✓							1	X
NK	~~0861_QC270_220328~~	"	✓							1	
5	0861_QC345_220328	"		✓						2	X
6	0861_QC480_220328	"		✓						2	X
7	0861_QC523_220328	"		✓						2	X
8	0861_QC171_220329	29/3/22		✓						2	X
NK	~~0861_QC271_220329~~	"		✓						2	
9	0861_QC346_220329	"		✓						2	X

Tripblank 140313

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Date: 7/4/22

Received by: Date: 7/4/22

Relinquished by: Signed: Date:

Received by: Signed: Date:

1400

QC

AECOM — **Chain of Custody** — COC Page 2 of 4

AECOM Australia Pty Ltd [redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no. :

Specifications: Please report in ESdat format	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	
6. Report Format: ESdat	7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
10	0861_451_220329	29/3/22		✓						2	X		
11	0861_452_220330	30/3/22		✓						2	X		
12	0861_524_220330	"		✓						2	X		Tripblank 140314
13	0861_QC172_220330	"		✓						2	X		
NR	~~0861_QC272_220330~~	"		✓						2			
14	0861_QC347_220330	"		✓						2	X		
15	0861_QC453_220331	31/3/22		✓						2	X		
16	0861_QC173_220331	"	✓							1	X		
NR	~~0861_QC273_220331~~	"	✓							1			
17	0861_QC174_220331	"	✓							1	X		
NR	~~0861_QC274_220331~~	"	✓							1			
18	0861_QC175_220331	"		✓						2	X		
NR	~~0861_QC275_220331~~	"		✓						2			
19	0861_QC348_220331	"		✓						2	X		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted] Date: 7/4/22

Received by: [redacted] Date: 7/4/22

Relinquished by: Signed: Date:

Received by: Signed: Date:

1400

QC

AECOM — **Chain of Custody** — COC Page 3 of 4

AECOM Australia Pty Ltd
[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	
6. Report Format: ESdat	7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
20	0861_QC454_220401	1/4/22		✓						2	X		
21	0861_QC176_220401	"		✓						2	X		
22	0861_QC477_220401	"	✓							1	X		
23	0861_QC178_220401	"		✓						2	X		
24	0861_QC179_220404	4/4/22		✓						2	X		
25	0861_QC349_220401	1/4/22		✓						2	X		
26	0861_QC455_220404	4/4/22		✓						2	X		
27	0861_QC350_220404	"		✓						2	X		
28	0861_QC456_220405	5/4/22		✓						2	X		
29	0861_QC351_220405	"		✓						2	X		
30	0861_QC457_220406	6/4/22		✓						2	X		
31	0861_QC180_220406	"		✓						2	X		
32	0861_QC181_220406	"		✓						2	X		
33	0861_QC352_220406	"		✓						2	X		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted] Date: 7/4/22

Received by: [redacted] Date: 7/4/22

Relinquished by: Signed: Date:

Received by: Signed: Date:

1400

QC

AECOM

Chain of Custody

COC Page 4 of 4

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
34	0861_QC458-220407	7/4/22		✓						2	X		
35	0861_QC353-220407	"		✓						2	X		
36	0861_QC525-220328	28/3/22	✓							1	X		TB 030249
37	0861_QC526_220330	30/3/22	✓							1	X		TB 030254
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Date: 7/6/22

Received by: [redacted] Date: 7/4/22

Relinquished by: Signed: Date:

Received by: Signed: Date:

Council

AECOM

Chain of Custody

COC Page 1 of 2

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no. :

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: fil'ed	acid	Ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0861_SD039_220328	28/3/22	✓							1	X		
2	0861_SW039_220328	"		✓						2	X		
3	0861_SD025_220328	"	✓							1	X		
4	0861_SW025_220328	"		✓						2	X		
5	0861_SD040_220328	"	✓							1	X		
6	0861_SW040_220328	"		✓						2	X		
7	0861_MW56S_220329	29/3/22		✓						2	X		
8	0861_MW56D_220329	"		✓						2	X		
9	0861_SD045_220329	"	✓							1	X		
10	0861_SW045_220329	"		✓						2	X		
11	0861_SD098_220401	1/4/22	✓							1	X		
12	0861_SW098_220401	"		✓						2	X		
13	0861_SD026_220401	"	✓							1	X		
14	0861_SW026_220401	"		✓						2	X		

Environmental Division
Brisbane
Work Order Reference
EB2209946
Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by: [redacted] Date: 7/4/22

Received by: [redacted] Date: 7/4/22

Relinquished by: Signed: Date:

Received by: Signed: Date:

1400

Council

AECOM

Chain of Custody

COC Page 2 of 2

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
15	0861_SD043_220404	4/4/22	✓							1			
16	0861_SW043_220404	"		✓						2			
17	0861_MW057S_220404	"		✓						2			
18	0861_MW057D-220404	"		✓						6			QA QC Internal.
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Date: 7/4/22

Received by: [redacted] Date: 7/4/22 1400

Relinquished by: Signed: Date:

Received by: Signed: Date:

General

AECOM — **Chain of Custody** — COC Page 1 of 10

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no. :

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0861_SD008_220328	28/3/22	✓							1	X		
2	0861_SW008_220328	"		✓						2	X		
3	0861_SD027_220328	"	✓							1	X		
4	0861_SW027_220328	"		✓						2	X		
5	0861_SD011_220328	"	✓							1	X		
6	0861_~~SD011~~ SW011_220328	"		✓						2	X		
7	0861_SD056_220328	"	✓							1	X		
8	0861_SW056_220328	"		✓						2	X		
9	0861_SD076_220328	"	✓							1	X		
10	0861_SW076_220328	"		✓						2	X		
11	0861_SD030_220328	"	✓							1	X		
12	0861_SW030_220328	"		✓						2	X		
13	0861_SD002_220328	"	✓							1	X		
14	0861_SW002_220328	"		✓						6	X		6 Bottles for QC

Environmental Division Brisbane
Work Order Reference
EB2209950

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by: [redacted] Date: 7/4/22

Received by: [redacted] Date: 7/4/22 1400

Relinquished by: Signed: Date:

Received by: Signed: Date:

General

AECOM — **Chain of Custody** — COC Page 2 of 10

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
15	0861_SD003_220328	28/3/22	✓							1	X		
16	0861_SW003_220328	"		✓						2	X		
17	0861_SD059_220328	"	✓							1	X		
18	0861_SW059_220328	"		✓						6	X		
19	0861_SD048_220328	"	✓							1	X		
20	0861_SW048_220328	"		✓						2	X		
NK	~~0861_SD059_220328~~	"	✓							1	X		
NK	~~0861_SW059_220328~~	"		✓						2	X		
NK	~~0861_SD025_220328~~	"	✓							1	X		
NK	~~0861_SW025_220328~~	"		✓						2	X		
21	0861_SD041_220328	28/3/22	✓							1	X		
22	0861_SW041_220328	"		✓						2	X		
23	0861_SW028_220329	29/3/22		✓						2	X		
24	0861_SD028_220329	"	✓							1	X		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by:	Nam Kuo	Signed:	Date: 7/4/22	Relinquished by:	Signed: Date:
Received by:	Josh Ham	Signed:	Date: 7/4/22 1400	Received by:	Signed: Date:

General

AECOM — **Chain of Custody** — COC Page 3 of 10

AECOM Australia Pty Ltd [redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
25	0861_MW048_220329	29/3/22		✓						2	X		
26	0861_SW004_220329	"		✓						2	X		
27	0861_SD004_220329	"	✓							1	X		
28	0861_SW005_220329	"		✓						2	X		
29	0861_SD005_220329	"	✓							1	X		
30	0861_SW009_220329	"		✓						2	X		
31	0861_SD009_220329	"	✓							1	X		
32	0861_SW016_220329	"		✓						2	X		
33	0861_SD016_220329	"	✓							1	X		
34	0861_SW015_220329	"		✓						2	X		
35	0861_SD015_220329	"	✓							1	X		
36	0861_SW034_220329	"		✓						2	X		
37	0861_SD034_220329	"	✓							1	X		
38	0861_SW018_220329	"		✓						2	X		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Date: 7/4/22

Received by: [redacted] Date: 7/4/22 1400

Relinquished by: Signed: Date:

Received by: Signed: Date:

General

AECOM — **Chain of Custody** — COC Page 4 of 10

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
39	0861_SD018_220329	29/3/22	✓							1	X		
40	0861_SW020_220329	"		✓						2	X		
41	0861_SD020_220329	"	✓							1	X		
42	0861_SW038_220330	30/3/22		✓						2	X		
43	0861_SD038_220330	"	✓							1	X		
44	0861_SW037_220330	"		✓						2	X		
45	0861_SD037_220330	"	✓							1	X		
46	0861_MW046_220330	"		✓						2	X		
47	0861_MW037_220330	"		✓						6	X		QC volume.
48	0861_MW047_~~220~~220330	"		✓						2	X		
49	0861_MW050_220330	"		✓						2	X		
50	0861_MW021_220330	"		✓						2	X		
51	0861_MW022_220330	"		✓						2	X		
52	0861_MW309_220330	"		✓						2	X		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Date: 7/4/22
Received by: [redacted] Date: 7/4/22

Relinquished by: Signed: Date:
Received by: Signed: Date:

1480

General

AECOM

Chain of Custody

COC Page 5 of 10

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
53	0861_SD049_220331	31/3/22	✓							1	X		
54	0861_SW049_220331	"		✓						2	X		
55	0861_SD021_220331	"	✓							1	X		
56	0861_SW021_220331	"		✓						2	X		
57	0861_SD089_220331	"	✓							1	X		
58	0861_SD090_220331	"	✓							1	X		
59	0861_SD091_220331	"	✓							1	X		
60	0861_SW089_220331	"		✓						2	X		
61	0861_SW090_220331	"		✓						2	X		
62	0861_SW091_220331	"		✓						2	X		
63	0861_SW052_220331	"		✓						2	X		
64	0861_SD057_220331	"	✓							1	X		
65	0861_SD088_220331	"	✓							1	X		
66	0861_SW088_220331	"		✓						2	X		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted] Date: 7/4/22 1400
Received by: [redacted] Date: 7/4/22

Relinquished by: Signed: Date:
Received by: Signed: Date:

General

AECOM — **Chain of Custody** — COC Page 6 of 10

AECOM Australia Pty Ltd [redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
67	0861_MW002_220331	31/3/22		✓						~~6~~	X		Vol Rev QC.
68	0861_SW047_220331	"		✓						2	X		
69	0861_SD047_220331	"	✓							1	X		
70	0861_MW020_220401	1/4/22		✓						2	X		
71	0861_MW031_220401	"		✓						2	X		
72	0861_MW034_220401	"		✓						2	X		
73	0861_~~MW044~~ MW044_220401	"		✓						2	X		
74	0861_SW051_220401	"		✓						2	X		
75	0861_SD051_220401	"	✓							1	X		
76	0861_MW055D_220401	"		✓						2	X		
77	0861_MW055S_220401	"		✓						2	X		
78	0861_SD094_220401	"	✓							1	X		
79	0861_SW094_220401	"		✓						2	X		
SMA 80	0861_SD096_220401	"	✓							1	X		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted] Date: 7/4/22
Received by: [redacted] Date: 7/4/22
1400

Relinquished by: Signed: Date:
Received by: Signed: Date:

General

AECOM — **Chain of Custody** — COC Page 7 of 10

AECOM Australia Pty Ltd
[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
81	0861_SW036_220401	1/4/22		✓						2	X		
82	0861_SD050_220401	"	✓							1	X		
83	0861_SW050_220401	"		✓						2	X		
	~~0861_SD098_220401~~	"	✓							1	X		
	~~0861_SW098_220401~~	"		✓						2	X		
	~~0861_SD016_220401~~	"	✓							1	X		
	~~0861_SW016_220401~~	"		✓						2	X		
84	0861_MW035_220404	4/4/22		✓						2	X		
85	0861_MW024_220404	"		✓						2	X		
86	0861_MW036_220404	"		✓						2	X		
87	0861_MW028_220404	"		✓						2	X		
88	0861_MW029_220404	"		✓						2	X		
89	0861_SD033_220405	5/4/22	✓							1	X		
90	0861_SW033_220405	"		✓						2	X		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME
Temp. received: °C
Report & invoice: [redacted]
Lab Report No: Esky ID:

Relinquished by: [redacted] Date: 7/4/22
Received by: Date: 7/4/22
Relinquished by: Signed: Date:
Received by: Signed: Date:

91 0861_SD034_220401 1.4.22 1400

General

AECOM — **Chain of Custody** — COC Page 8 of 10

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no. :

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0861_MW042_220405	5/4/22		✓						2	✓		
2	0861_MW043_220405	"		✓						2	✓		
3	0861_MW041_220405	"		✓						2	✓		
—	0861_~~SW088_220331~~	~~3/3/22~~	—	✓						2	✓		
—	0861_~~SD088_220331~~	~~"~~	✓	—						1	✓		
4	0861_SW064_220406	6/4/22		✓						2	✓		
5	0861_SD064_220406	"	✓							1	✓		
6	0861_SD067_220406	"	✓							1	✓		
7	0861_SW079_220406	"		✓						2	✓		
8	0861_SD079_220406	"	✓							1	✓		
9	0861_SW080_220406	"		✓						2	✓		
10	0861_SD080_220406	"	✓							1	✓		
11	0861_SW053_220406	"		✓						2	✓		
12	0861_SD053_220406	"	✓							1	✓		

Environmental Division
Brisbane
Work Order Reference
EB2209951

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Date: 7/4/22

Received by: [redacted] Date: 7/4/22

Relinquished by: Signed: Date:

Received by: Signed: Date:

1400

General

AECOM — **Chain of Custody** — COC Page 9 of 10

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no. :

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
13	0861_ MW020_220406	6/4/22		✓						2	X		
14	0861_ MW012_220406	"		✓						2	X		
15	0861_ MW026_220406	"		✓						2	X		
16	0861_ MW033_220406	"		✓						2	X		
17	0861_ ~~MW007~~ MW007_220406	"		✓						2	X		
18	0861_ MW025_220406	"		✓						2	X		
19	0861_ MW032_220406	"		✓						2	X		
20	0861_ MW005_220406	"		✓						2	X		
21	0861_ MW006_220407	7/4/22		✓						6	X		QAQC Volume.
22	0861_ MW023_220407	"		✓						2	X		
23	0861_ MW049_220407	"		✓						2	X		
24	0861_SW099_220329	29/3/22		✓						2	X		
25	0861_SD099_220329	"	✓							1	X		
26	0861_ SW100_220329	"		✓						2	X		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted] Date: 7/4/22

Received by: [redacted] Date: 7/4/22

Relinquished by: Signed: Date:

Received by: Signed: Date:

1400

General

AECOM

Chain of Custody

COC Page 20 of 20

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By:

Mobile no. :

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
37	0861_SD100-220329	29/3/22	✓							1	X		
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Date: 7/4/22

Received by: [redacted] Date: 7/4/22

1400

Relinquished by: Signed: Date:

Received by: Signed: Date:

Appendix E

Laboratory Analytical Certificates and QA/QC Reports

Appendix E Laboratory Analytical Certificates and QA/QC Reports

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2209940**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0861_PFASOMP	Page	: 1 of 3
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 07-Apr-2022 14:00	Issue Date	: 09-Apr-2022
Client Requested Due Date	: 20-Apr-2022	Scheduled Reporting Date	: **20-Apr-2022**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 7.8°C - Ice present
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2209940-001	05-Apr-2022 00:00	0861_MW054S_220405	✓
EB2209940-002	05-Apr-2022 00:00	0861_MW054D_220405	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	[redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	[redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2209940**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +[redacted]	Telephone	: +[redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 07-Apr-2022
Order number	: 60612563 3.1	Date Analysis Commenced	: 11-Apr-2022
C-O-C number	: ----	Issue Date	: 20-Apr-2022
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 2		
No. of samples analysed	: 2		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4281148)									
EB2209733-019	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	2.94	2.95	0.6	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	5.12	4.99	2.5	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.72	0.73	2.0	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.81	0.81	0.0	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.25	0.25	0.0	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4281148)									
EB2209733-019	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.41	0.41	0.0	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.75	0.81	7.5	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	2.10	2.18	3.9	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.27	0.28	0.0	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.7	0.7	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4281148)									
EB2209733-019	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4281148) - continued									
EB2209733-019	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4281148)									
EB2209733-019	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4281148)									
EB2209733-019	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	14.1	14.1	0.4	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	8.06	7.94	1.5	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	13.0	13.0	0.3	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4281148)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	121	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	127	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	110	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	127	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	117	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	125	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281148)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	125	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	125	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	129	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	119	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	131	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	119	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	128	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	126	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	133	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	122	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	104	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281148)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	136	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	120	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	127	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	133	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	119	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	136	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	127	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4281148)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	118	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	122	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	131	67.0	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4281148) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	99.8	64.2	133
EP231P: PFAS Sums (QCLot: 4281148)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2209940**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 07-Apr-2022
Site	: ----	Issue Date	: 20-Apr-2022
Sampler	: ----	No. of samples received	: 2
Order number	: 60612563 3.1	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	12	8.33	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	12	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0861_MW054S_220405,	0861_MW054D_220405	**05-Apr-2022**	**12-Apr-2022**	02-Oct-2022	✓	**12-Apr-2022**	02-Oct-2022	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0861_MW054S_220405,	0861_MW054D_220405	**05-Apr-2022**	**12-Apr-2022**	02-Oct-2022	✓	**12-Apr-2022**	02-Oct-2022	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0861_MW054S_220405,	0861_MW054D_220405	**05-Apr-2022**	**12-Apr-2022**	02-Oct-2022	✓	**12-Apr-2022**	02-Oct-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0861_MW054S_220405,	0861_MW054D_220405	**05-Apr-2022**	**12-Apr-2022**	02-Oct-2022	✓	**12-Apr-2022**	02-Oct-2022	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0861_MW054S_220405,	0861_MW054D_220405	**05-Apr-2022**	**12-Apr-2022**	02-Oct-2022	✓	**12-Apr-2022**	02-Oct-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	12	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2209940**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +[redacted]	Telephone	: +[redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 07-Apr-2022 14:00
Order number	: 60612563 3.1	Date Analysis Commenced	: 11-Apr-2022
C-O-C number	: ----	Issue Date	: 20-Apr-2022 15:14
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X - PFAS: Whole bottle extraction was not possible for sample "0861_MW054D_220405". Sample required dilution prior to extraction due to matrix interference (high sediment content). LOR values have been adjusted accordingly. The LOR of PFHxS & PFOS have been further raised due to additional matrix interference.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW054S_220405	0861_MW054D_220405	----	----	----
				Sampling date / time	05-Apr-2022 00:00	05-Apr-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2209940-001	EB2209940-002	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.08**	<0.03	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.16**	<0.05	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.03**	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.01**	<0.02	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.06	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.06	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.06	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW054S_220405	0861_MW054D_220405	----	----	----
				Sampling date / time	05-Apr-2022 00:00	05-Apr-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2209940-001	EB2209940-002	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.06	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.06	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.28**	<0.02	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.24**	<0.02	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.28**	<0.02	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.9**	**90.3**	----	----	----
13C8-PFOA	----	0.02	%		**109**	**105**	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2209942**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0861_PFASOMP	Page	: 1 of 4
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 07-Apr-2022 14:00	Issue Date	: 09-Apr-2022
Client Requested Due Date	: 21-Apr-2022	Scheduled Reporting Date	: **21-Apr-2022**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 7.8°C, 8.0°C, 7.3°C, 9.7°C - Ice present
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 37 / 37

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2209942-001	28-Mar-2022 00:00	0861_QC167_220328	✓	✓
EB2209942-004	28-Mar-2022 00:00	0861_QC170_220328	✓	✓
EB2209942-016	31-Mar-2022 00:00	0861_QC173_220331	✓	✓
EB2209942-017	31-Mar-2022 00:00	0861_QC174_220331	✓	✓
EB2209942-022	01-Apr-2022 00:00	0861_QC177_220401	✓	✓
EB2209942-036	28-Mar-2022 00:00	0861_QC525_280322	✓	✓
EB2209942-037	30-Mar-2022 00:00	0861_QC526_220330	✓	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2209942-002	28-Mar-2022 00:00	0861_QC168_220328	✓
EB2209942-003	28-Mar-2022 00:00	0861_QC169_220328	✓
EB2209942-005	28-Mar-2022 00:00	0861_QC345_220328	✓
EB2209942-006	28-Mar-2022 00:00	0861_QC450_220328	✓
EB2209942-007	28-Mar-2022 00:00	0861_QC523_220328	✓
EB2209942-008	29-Mar-2022 00:00	0861_QC171_220329	✓
EB2209942-009	29-Mar-2022 00:00	0861_QC346_220329	✓
EB2209942-010	29-Mar-2022 00:00	0861_QC451_220329	✓
EB2209942-011	30-Mar-2022 00:00	0861_QC452_220330	✓
EB2209942-012	30-Mar-2022 00:00	0861_QC524_220330	✓
EB2209942-013	30-Mar-2022 00:00	0861_QC172_220330	✓
EB2209942-014	30-Mar-2022 00:00	0861_QC347_220330	✓
EB2209942-015	31-Mar-2022 00:00	0861_QC453_220331	✓
EB2209942-018	31-Mar-2022 00:00	0861_QC175_220331	✓
EB2209942-019	31-Mar-2022 00:00	0861_QC348_220331	✓
EB2209942-020	01-Apr-2022 00:00	0861_QC454_220401	✓

			WATER - EP231X PFAS - Full Suite (28 analytes)
EB2209942-021	01-Apr-2022 00:00	0861_QC176_220401	✓
EB2209942-023	01-Apr-2022 00:00	0861_QC178_220401	✓
EB2209942-024	04-Apr-2022 00:00	0861_QC179_220404	✓
EB2209942-025	01-Apr-2022 00:00	0861_QC349_220401	✓
EB2209942-026	04-Apr-2022 00:00	0861_QC455_220404	✓
EB2209942-027	04-Apr-2022 00:00	0861_QC350_220404	✓
EB2209942-028	05-Apr-2022 00:00	0861_QC456_220405	✓
EB2209942-029	05-Apr-2022 00:00	0861_QC351_220405	✓
EB2209942-030	06-Apr-2022 00:00	0861_QC457_220406	✓
EB2209942-031	06-Apr-2022 00:00	0861_QC180_220406	✓
EB2209942-032	06-Apr-2022 00:00	0861_QC181_220406	✓
EB2209942-033	06-Apr-2022 00:00	0861_QC352_220406	✓
EB2209942-034	07-Apr-2022 00:00	0861_QC458_220407	✓
EB2209942-035	07-Apr-2022 00:00	0861_QC353_220407	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	[redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2209942**	Page	: 1 of 10
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 07-Apr-2022
Order number	: 60612563 3.1	Date Analysis Commenced	: 11-Apr-2022
C-O-C number	: ----	Issue Date	: 21-Apr-2022
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 37		
No. of samples analysed	: 37		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4279451)									
EB2209942-001	0861_QC167_220328	EA055: Moisture Content	----	0.1	%	41.0	44.2	7.3	0% - 20%
EB2209946-009	Anonymous	EA055: Moisture Content	----	0.1	%	36.6	36.7	0.4	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4279450)									
EB2209942-001	0861_QC167_220328	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0010	0.0012	18.6	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0125	0.0148	16.7	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2209946-009	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0026	0.0028	6.6	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4279450)									
EB2209942-001	0861_QC167_220328	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0005	0.0005	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0003	<0.0003	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0005	0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4279450) - continued									
EB2209942-001	0861_QC167_220328	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2209946-009	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4279450)									
EB2209942-001	0861_QC167_220328	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2209946-009	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4279450)									
EB2209942-001	0861_QC167_220328	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2209946-009	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4279450)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	124	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	# 148	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	112	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	# 138	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	122	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	119	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4279450)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	# 145	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	113	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	127	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	126	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	131	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	113	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	121	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	122	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	132	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	130	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	# 141	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4279450)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	130	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	104	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	# 140	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	# 143	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	140	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	128	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4279450)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	132	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	135	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	100	65.0	137

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4279450) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	# 170	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4281149)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	125	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	127	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	103	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	131	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	120	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	140	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4281152)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	118	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	126	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	124	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	126	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	131	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	124	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4281153)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	108	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	114	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	101	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	129	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	107	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	105	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281149)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	122	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	114	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	124	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	125	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	127	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	120	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	108	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	122	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	112	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	116	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	116	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281152)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281152) - continued								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	110	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	116	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	117	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	119	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	112	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	129	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	105	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	118	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	130	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	118	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281153)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	108	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	112	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	126	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	111	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	105	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	118	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	115	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	116	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	124	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	111	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	121	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281149)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	102	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	141	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	107	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	131	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	114	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	130	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	118	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281152)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	137	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	121	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	132	60.5	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281152) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	128	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	114	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	114	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	107	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281153)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	106	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	96.7	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	107	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	97.5	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	96.3	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	127	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	131	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4281149)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	143	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	118	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	118	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	116	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4281152)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	139	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	133	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	127	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	133	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4281153)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	126	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	129	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	131	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	128	64.2	133
EP231P: PFAS Sums (QCLot: 4281149)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	LCS: Spike Recovery (%)	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231P: PFAS Sums (QCLot: 4281149) - continued								
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 4281152)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 4281153)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4279450)							
EB2209942-004	0861_QC170_220328	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	126	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	122	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	129	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	125	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	109	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	125	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4279450)							
EB2209942-004	0861_QC170_220328	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	134	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	129	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	122	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	117	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	118	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	123	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	107	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	120	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	109	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	112	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	121	69.0	133

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4279450)							
EB2209942-004	0861_QC170_220328	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	106	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	114	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	84.3	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	128	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	124	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	120	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	126	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4279450)							
EB2209942-004	0861_QC170_220328	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	144	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	139	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	116	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	114	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2209942**	Page	: 1 of 11
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: +[redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 07-Apr-2022
Site	: ----	Issue Date	: 21-Apr-2022
Sampler	: ----	No. of samples received	: 37
Order number	: 60612563 3.1	No. of samples analysed	: 37

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	QC-4279450-002	----	**Perfluoropentane sulfonic acid (PFPeS)**	2706-91-4	148 %	73.0-123%	**Recovery greater than upper control limit**
EP231A: Perfluoroalkyl Sulfonic Acids	QC-4279450-002	----	**Perfluoroheptane sulfonic acid (PFHpS)**	375-92-8	138 %	70.0-132%	**Recovery greater than upper control limit**
EP231B: Perfluoroalkyl Carboxylic Acids	QC-4279450-002	----	**Perfluorobutanoic acid (PFBA)**	375-22-4	145 %	71.0-135%	**Recovery greater than upper control limit**
EP231B: Perfluoroalkyl Carboxylic Acids	QC-4279450-002	----	**Perfluorotetradecanoic acid (PFTeDA)**	376-06-7	141 %	69.0-133%	**Recovery greater than upper control limit**
EP231C: Perfluoroalkyl Sulfonamides	QC-4279450-002	----	**N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)**	24448-09-7	140 %	61.5-139%	**Recovery greater than upper control limit**
EP231C: Perfluoroalkyl Sulfonamides	QC-4279450-002	----	**N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)**	1691-99-2	143 %	61.9-137%	**Recovery greater than upper control limit**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	QC-4279450-002	----	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	170 %	54.8-124%	**Recovery greater than upper control limit**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	38	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	38	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) 0861_QC177_220401	**01-Apr-2022**	**----**	----	----	**11-Apr-2022**	15-Apr-2022	✓
HDPE Soil Jar (EA055) 0861_QC167_220328, 0861_QC170_220328, 0861_QC525_280322	**28-Mar-2022**	**----**	----	----	**11-Apr-2022**	11-Apr-2022	✓
HDPE Soil Jar (EA055) 0861_QC526_220330	**30-Mar-2022**	**----**	----	----	**11-Apr-2022**	13-Apr-2022	✓
HDPE Soil Jar (EA055) 0861_QC173_220331, 0861_QC174_220331	**31-Mar-2022**	**----**	----	----	**11-Apr-2022**	14-Apr-2022	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_QC177_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_QC167_220328, 0861_QC170_220328, 0861_QC525_280322	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_QC526_220330	**30-Mar-2022**	**12-Apr-2022**	26-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_QC173_220331, 0861_QC174_220331	**31-Mar-2022**	**12-Apr-2022**	27-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0861_QC177_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_QC167_220328, 0861_QC170_220328, 0861_QC525_280322	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_QC526_220330	**30-Mar-2022**	**12-Apr-2022**	26-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_QC173_220331, 0861_QC174_220331	**31-Mar-2022**	**12-Apr-2022**	27-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0861_QC177_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_QC167_220328, 0861_QC170_220328, 0861_QC525_280322	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_QC526_220330	**30-Mar-2022**	**12-Apr-2022**	26-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_QC173_220331, 0861_QC174_220331	**31-Mar-2022**	**12-Apr-2022**	27-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_QC177_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_QC167_220328, 0861_QC170_220328, 0861_QC525_280322	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_QC526_220330	**30-Mar-2022**	**12-Apr-2022**	26-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_QC173_220331, 0861_QC174_220331	**31-Mar-2022**	**12-Apr-2022**	27-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0861_QC177_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_QC167_220328, 0861_QC170_220328, 0861_QC525_280322	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_QC526_220330	**30-Mar-2022**	**12-Apr-2022**	26-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_QC173_220331, 0861_QC174_220331	**31-Mar-2022**	**12-Apr-2022**	27-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0861_QC454_220401,	0861_QC176_220401,	**01-Apr-2022**	**13-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	28-Sep-2022	✓
0861_QC178_220401,	0861_QC349_220401							
HDPE (no PTFE) (EP231X)								
0861_QC179_220404,	0861_QC455_220404,	**04-Apr-2022**	**13-Apr-2022**	01-Oct-2022	✓	**13-Apr-2022**	01-Oct-2022	✓
0861_QC350_220404								
HDPE (no PTFE) (EP231X)								
0861_QC456_220405,	0861_QC351_220405	**05-Apr-2022**	**13-Apr-2022**	02-Oct-2022	✓	**13-Apr-2022**	02-Oct-2022	✓
HDPE (no PTFE) (EP231X)								
0861_QC457_220406,	0861_QC180_220406,	**06-Apr-2022**	**13-Apr-2022**	03-Oct-2022	✓	**13-Apr-2022**	03-Oct-2022	✓
0861_QC181_220406,	0861_QC352_220406							
HDPE (no PTFE) (EP231X)								
0861_QC458_220407,	0861_QC353_220407	**07-Apr-2022**	**13-Apr-2022**	04-Oct-2022	✓	**13-Apr-2022**	04-Oct-2022	✓
HDPE (no PTFE) (EP231X)								
0861_QC168_220328,	0861_QC169_220328,	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**12-Apr-2022**	24-Sep-2022	✓
0861_QC345_220328,	0861_QC450_220328,							
0861_QC523_220328								
HDPE (no PTFE) (EP231X)								
0861_QC171_220329,	0861_QC346_220329,	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**12-Apr-2022**	25-Sep-2022	✓
0861_QC451_220329								
HDPE (no PTFE) (EP231X)								
0861_QC452_220330,	0861_QC524_220330,	**30-Mar-2022**	**12-Apr-2022**	26-Sep-2022	✓	**12-Apr-2022**	26-Sep-2022	✓
0861_QC172_220330,	0861_QC347_220330							
HDPE (no PTFE) (EP231X)								
0861_QC453_220331		**31-Mar-2022**	**12-Apr-2022**	27-Sep-2022	✓	**12-Apr-2022**	27-Sep-2022	✓
HDPE (no PTFE) (EP231X)								
0861_QC175_220331,	0861_QC348_220331	**31-Mar-2022**	**13-Apr-2022**	27-Sep-2022	✓	**13-Apr-2022**	27-Sep-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0861_QC454_220401,	0861_QC176_220401,	**01-Apr-2022**	**13-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	28-Sep-2022	✓
0861_QC178_220401,	0861_QC349_220401							
HDPE (no PTFE) (EP231X)								
0861_QC179_220404,	0861_QC455_220404,	**04-Apr-2022**	**13-Apr-2022**	01-Oct-2022	✓	**13-Apr-2022**	01-Oct-2022	✓
0861_QC350_220404								
HDPE (no PTFE) (EP231X)								
0861_QC456_220405,	0861_QC351_220405	**05-Apr-2022**	**13-Apr-2022**	02-Oct-2022	✓	**13-Apr-2022**	02-Oct-2022	✓
HDPE (no PTFE) (EP231X)								
0861_QC457_220406,	0861_QC180_220406,	**06-Apr-2022**	**13-Apr-2022**	03-Oct-2022	✓	**13-Apr-2022**	03-Oct-2022	✓
0861_QC181_220406,	0861_QC352_220406							
HDPE (no PTFE) (EP231X)								
0861_QC458_220407,	0861_QC353_220407	**07-Apr-2022**	**13-Apr-2022**	04-Oct-2022	✓	**13-Apr-2022**	04-Oct-2022	✓
HDPE (no PTFE) (EP231X)								
0861_QC168_220328,	0861_QC169_220328,	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**12-Apr-2022**	24-Sep-2022	✓
0861_QC345_220328,	0861_QC450_220328,							
0861_QC523_220328								
HDPE (no PTFE) (EP231X)								
0861_QC171_220329,	0861_QC346_220329,	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**12-Apr-2022**	25-Sep-2022	✓
0861_QC451_220329								
HDPE (no PTFE) (EP231X)								
0861_QC452_220330,	0861_QC524_220330,	**30-Mar-2022**	**12-Apr-2022**	26-Sep-2022	✓	**12-Apr-2022**	26-Sep-2022	✓
0861_QC172_220330,	0861_QC347_220330							
HDPE (no PTFE) (EP231X)								
0861_QC453_220331		**31-Mar-2022**	**12-Apr-2022**	27-Sep-2022	✓	**12-Apr-2022**	27-Sep-2022	✓
HDPE (no PTFE) (EP231X)								
0861_QC175_220331,	0861_QC348_220331	**31-Mar-2022**	**13-Apr-2022**	27-Sep-2022	✓	**13-Apr-2022**	27-Sep-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0861_QC454_220401,	0861_QC176_220401,	**01-Apr-2022**	**13-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	28-Sep-2022	✓
0861_QC178_220401,	0861_QC349_220401							
HDPE (no PTFE) (EP231X)								
0861_QC179_220404,	0861_QC455_220404,	**04-Apr-2022**	**13-Apr-2022**	01-Oct-2022	✓	**13-Apr-2022**	01-Oct-2022	✓
0861_QC350_220404								
HDPE (no PTFE) (EP231X)								
0861_QC456_220405,	0861_QC351_220405	**05-Apr-2022**	**13-Apr-2022**	02-Oct-2022	✓	**13-Apr-2022**	02-Oct-2022	✓
HDPE (no PTFE) (EP231X)								
0861_QC457_220406,	0861_QC180_220406,	**06-Apr-2022**	**13-Apr-2022**	03-Oct-2022	✓	**13-Apr-2022**	03-Oct-2022	✓
0861_QC181_220406,	0861_QC352_220406							
HDPE (no PTFE) (EP231X)								
0861_QC458_220407,	0861_QC353_220407	**07-Apr-2022**	**13-Apr-2022**	04-Oct-2022	✓	**13-Apr-2022**	04-Oct-2022	✓
HDPE (no PTFE) (EP231X)								
0861_QC168_220328,	0861_QC169_220328,	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**12-Apr-2022**	24-Sep-2022	✓
0861_QC345_220328,	0861_QC450_220328,							
0861_QC523_220328								
HDPE (no PTFE) (EP231X)								
0861_QC171_220329,	0861_QC346_220329,	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**12-Apr-2022**	25-Sep-2022	✓
0861_QC451_220329								
HDPE (no PTFE) (EP231X)								
0861_QC452_220330,	0861_QC524_220330,	**30-Mar-2022**	**12-Apr-2022**	26-Sep-2022	✓	**12-Apr-2022**	26-Sep-2022	✓
0861_QC172_220330,	0861_QC347_220330							
HDPE (no PTFE) (EP231X)								
0861_QC453_220331		**31-Mar-2022**	**12-Apr-2022**	27-Sep-2022	✓	**12-Apr-2022**	27-Sep-2022	✓
HDPE (no PTFE) (EP231X)								
0861_QC175_220331,	0861_QC348_220331	**31-Mar-2022**	**13-Apr-2022**	27-Sep-2022	✓	**13-Apr-2022**	27-Sep-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0861_QC454_220401,	0861_QC176_220401,	**01-Apr-2022**	**13-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	28-Sep-2022	✓
0861_QC178_220401,	0861_QC349_220401							
HDPE (no PTFE) (EP231X)								
0861_QC179_220404,	0861_QC455_220404,	**04-Apr-2022**	**13-Apr-2022**	01-Oct-2022	✓	**13-Apr-2022**	01-Oct-2022	✓
0861_QC350_220404								
HDPE (no PTFE) (EP231X)								
0861_QC456_220405,	0861_QC351_220405	**05-Apr-2022**	**13-Apr-2022**	02-Oct-2022	✓	**13-Apr-2022**	02-Oct-2022	✓
HDPE (no PTFE) (EP231X)								
0861_QC457_220406,	0861_QC180_220406,	**06-Apr-2022**	**13-Apr-2022**	03-Oct-2022	✓	**13-Apr-2022**	03-Oct-2022	✓
0861_QC181_220406,	0861_QC352_220406							
HDPE (no PTFE) (EP231X)								
0861_QC458_220407,	0861_QC353_220407	**07-Apr-2022**	**13-Apr-2022**	04-Oct-2022	✓	**13-Apr-2022**	04-Oct-2022	✓
HDPE (no PTFE) (EP231X)								
0861_QC168_220328,	0861_QC169_220328,	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**12-Apr-2022**	24-Sep-2022	✓
0861_QC345_220328,	0861_QC450_220328,							
0861_QC523_220328								
HDPE (no PTFE) (EP231X)								
0861_QC171_220329,	0861_QC346_220329,	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**12-Apr-2022**	25-Sep-2022	✓
0861_QC451_220329								
HDPE (no PTFE) (EP231X)								
0861_QC452_220330,	0861_QC524_220330,	**30-Mar-2022**	**12-Apr-2022**	26-Sep-2022	✓	**12-Apr-2022**	26-Sep-2022	✓
0861_QC172_220330,	0861_QC347_220330							
HDPE (no PTFE) (EP231X)								
0861_QC453_220331		**31-Mar-2022**	**12-Apr-2022**	27-Sep-2022	✓	**12-Apr-2022**	27-Sep-2022	✓
HDPE (no PTFE) (EP231X)								
0861_QC175_220331,	0861_QC348_220331	**31-Mar-2022**	**13-Apr-2022**	27-Sep-2022	✓	**13-Apr-2022**	27-Sep-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0861_QC454_220401,	0861_QC176_220401,	**01-Apr-2022**	**13-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	28-Sep-2022	✓
0861_QC178_220401,	0861_QC349_220401							
HDPE (no PTFE) (EP231X)								
0861_QC179_220404,	0861_QC455_220404,	**04-Apr-2022**	**13-Apr-2022**	01-Oct-2022	✓	**13-Apr-2022**	01-Oct-2022	✓
0861_QC350_220404								
HDPE (no PTFE) (EP231X)								
0861_QC456_220405,	0861_QC351_220405	**05-Apr-2022**	**13-Apr-2022**	02-Oct-2022	✓	**13-Apr-2022**	02-Oct-2022	✓
HDPE (no PTFE) (EP231X)								
0861_QC457_220406,	0861_QC180_220406,	**06-Apr-2022**	**13-Apr-2022**	03-Oct-2022	✓	**13-Apr-2022**	03-Oct-2022	✓
0861_QC181_220406,	0861_QC352_220406							
HDPE (no PTFE) (EP231X)								
0861_QC458_220407,	0861_QC353_220407	**07-Apr-2022**	**13-Apr-2022**	04-Oct-2022	✓	**13-Apr-2022**	04-Oct-2022	✓
HDPE (no PTFE) (EP231X)								
0861_QC168_220328,	0861_QC169_220328,	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**12-Apr-2022**	24-Sep-2022	✓
0861_QC345_220328,	0861_QC450_220328,							
0861_QC523_220328								
HDPE (no PTFE) (EP231X)								
0861_QC171_220329,	0861_QC346_220329,	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**12-Apr-2022**	25-Sep-2022	✓
0861_QC451_220329								
HDPE (no PTFE) (EP231X)								
0861_QC452_220330,	0861_QC524_220330,	**30-Mar-2022**	**12-Apr-2022**	26-Sep-2022	✓	**12-Apr-2022**	26-Sep-2022	✓
0861_QC172_220330,	0861_QC347_220330							
HDPE (no PTFE) (EP231X)								
0861_QC453_220331		**31-Mar-2022**	**12-Apr-2022**	27-Sep-2022	✓	**12-Apr-2022**	27-Sep-2022	✓
HDPE (no PTFE) (EP231X)								
0861_QC175_220331,	0861_QC348_220331	**31-Mar-2022**	**13-Apr-2022**	27-Sep-2022	✓	**13-Apr-2022**	27-Sep-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	38	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	38	**7.89**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	38	**7.89**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	38	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2209942**	Page	: 1 of 19
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +[redacted]	Telephone	: +[redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 07-Apr-2022 14:00
Order number	: 60612563 3.1	Date Analysis Commenced	: 11-Apr-2022
C-O-C number	: ----	Issue Date	: 21-Apr-2022 18:20
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 37		
No. of samples analysed	: 37		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X PFAS: High LCS recovery deemed acceptable as all associated analyte results are less than LOR
- EP231X PFAS: Whole bottle extraction was not possible for sample "0861_QC172_220330". Sample required dilution prior to extraction due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- EP231X PFAS: The LOR of PFUnDA for sample '0861_QC167_220328' (EB2209942-001) has been raised due to sample matrix interferences.
- EP231X PFAS: The LOR of PFDA for sample '0861_QC177_220401' (EB2209942-022) has been raised due to sample matrix interferences.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_QC167_220328	0861_QC170_220328	0861_QC173_220331	0861_QC174_220331	0861_QC177_220401
			Sampling date / time	28-Mar-2022 00:00	28-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	01-Apr-2022 00:00
Compound	CAS Number	LOR	Unit	EB2209942-001	EB2209942-004	EB2209942-016	EB2209942-017	EB2209942-022
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**41.0**	**28.9**	**16.9**	**29.3**	**31.1**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0010**	<0.0002	<0.0002	<0.0002	**0.0006**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0125**	<0.0002	**0.0003**	<0.0002	**0.0103**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	**0.0005**	<0.0002	<0.0002	<0.0002	**0.0008**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	**0.0004**	<0.0002	<0.0002	<0.0002	**0.0007**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**0.0004**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	**0.0004**	<0.0002	<0.0002	<0.0002	**0.0004**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**0.0002**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0003
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0003	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	**0.0005**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_QC167_220328	0861_QC170_220328	0861_QC173_220331	0861_QC174_220331	0861_QC177_220401
				Sampling date / time	28-Mar-2022 00:00	28-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	01-Apr-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209942-001	EB2209942-004	EB2209942-016	EB2209942-017	EB2209942-022
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0153**	<0.0002	**0.0003**	<0.0002	**0.0134**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0135**	<0.0002	**0.0003**	<0.0002	**0.0109**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0148**	<0.0002	**0.0003**	<0.0002	**0.0132**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**128**	**120**	**130**	**132**	**120**
13C8-PFOA	----	0.0002	%		**117**	**102**	**108**	**125**	**110**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_QC525_280322	0861_QC526_220330	----	----	----
				Sampling date / time	28-Mar-2022 00:00	30-Mar-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2209942-036	EB2209942-037	--------	--------	--------
					Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		<0.1	<0.1	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_QC525_280322	0861_QC526_220330	----	----	----
				Sampling date / time	28-Mar-2022 00:00	30-Mar-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2209942-036	EB2209942-037	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**119**	**125**	----	----	----
13C8-PFOA	----	0.0002	%		**119**	**112**	----	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_QC168_220328	0861_QC169_220328	0861_QC345_220328	0861_QC450_220328	0861_QC523_220328
				Sampling date / time	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00
					EB2209942-002	EB2209942-003	EB2209942-005	EB2209942-006	EB2209942-007
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.71**	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.84**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**3.12**	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.20**	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**2.94**	<0.01	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.4**	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**1.00**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.69**	**0.03**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.46**	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.41**	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.03**	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC168_220328	0861_QC169_220328	0861_QC345_220328	0861_QC450_220328	0861_QC523_220328
				Sampling date / time	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209942-002	EB2209942-003	EB2209942-005	EB2209942-006	EB2209942-007
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.16**	**0.29**	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**12.0**	**0.32**	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**6.06**	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**10.9**	**0.32**	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**----**	**122**	**110**	**110**
13C8-PFOA	----	0.02	%		**92.7**	**----**	**101**	**96.3**	**93.8**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_QC171_220329	0861_QC346_220329	0861_QC451_220329	0861_QC452_220330	0861_QC524_220330
				Sampling date / time	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	30-Mar-2022 00:00	30-Mar-2022 00:00
					EB2209942-008	EB2209942-009	EB2209942-010	EB2209942-011	EB2209942-012
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC171_220329	0861_QC346_220329	0861_QC451_220329	0861_QC452_220330	0861_QC524_220330
				Sampling date / time	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	30-Mar-2022 00:00	30-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209942-008	EB2209942-009	EB2209942-010	EB2209942-011	EB2209942-012
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**120**	**107**	**104**	**106**	**104**
13C8-PFOA	----	0.02	%		**98.4**	**91.0**	**98.6**	**99.4**	**101**

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_QC172_220330	0861_QC347_220330	0861_QC453_220331	0861_QC175_220331	0861_QC348_220331
				Sampling date / time	30-Mar-2022 00:00	30-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00
					EB2209942-013	EB2209942-014	EB2209942-015	EB2209942-018	EB2209942-019
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.51**	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**2.88**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**20.9**	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**1.64**	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**50.2**	<0.01	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.4**	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.64**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**2.73**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.93**	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**2.37**	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.08**	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC172_220330	0861_QC347_220330	0861_QC453_220331	0861_QC175_220331	0861_QC348_220331
				Sampling date / time	30-Mar-2022 00:00	30-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209942-013	EB2209942-014	EB2209942-015	EB2209942-018	EB2209942-019
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**84.3**	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**71.1**	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**79.7**	<0.01	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**112**	**105**	**113**	**117**	**128**
13C8-PFOA	----	0.02	%		**95.8**	**95.0**	**83.9**	**102**	**104**

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_QC454_220401	0861_QC176_220401	0861_QC178_220401	0861_QC179_220404	0861_QC349_220401
				Sampling date / time	01-Apr-2022 00:00	01-Apr-2022 00:00	01-Apr-2022 00:00	04-Apr-2022 00:00	01-Apr-2022 00:00
					EB2209942-020	EB2209942-021	EB2209942-023	EB2209942-024	EB2209942-025
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	**0.14**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.12**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	**0.48**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**0.02**	<0.01	**0.28**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	**0.03**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.10**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.05**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC454_220401	0861_QC176_220401	0861_QC178_220401	0861_QC179_220404	0861_QC349_220401
				Sampling date / time	01-Apr-2022 00:00	01-Apr-2022 00:00	01-Apr-2022 00:00	04-Apr-2022 00:00	01-Apr-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209942-020	EB2209942-021	EB2209942-023	EB2209942-024	EB2209942-025
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**0.02**	<0.01	**1.20**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.02**	<0.01	**0.76**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.02**	<0.01	**1.08**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**----**	**134**	**118**	**113**	**102**
13C8-PFOA	----	0.02	%		**----**	**107**	**107**	**102**	**104**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_QC455_220404	0861_QC350_220404	0861_QC456_220405	0861_QC351_220405	0861_QC457_220406
				Sampling date / time	04-Apr-2022 00:00	04-Apr-2022 00:00	05-Apr-2022 00:00	05-Apr-2022 00:00	06-Apr-2022 00:00
					EB2209942-026	EB2209942-027	EB2209942-028	EB2209942-029	EB2209942-030
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC455_220404	0861_QC350_220404	0861_QC456_220405	0861_QC351_220405	0861_QC457_220406
				Sampling date / time	04-Apr-2022 00:00	04-Apr-2022 00:00	05-Apr-2022 00:00	05-Apr-2022 00:00	06-Apr-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209942-026	EB2209942-027	EB2209942-028	EB2209942-029	EB2209942-030
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**120**	**113**	**114**	**106**	**107**
13C8-PFOA	----	0.02	%		**102**	**106**	**106**	**102**	**106**

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_QC180_220406	0861_QC181_220406	0861_QC352_220406	0861_QC458_220407	0861_QC353_220407
				Sampling date / time	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00	07-Apr-2022 00:00	07-Apr-2022 00:00
					EB2209942-031	EB2209942-032	EB2209942-033	EB2209942-034	EB2209942-035
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.24**	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.15**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.72**	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.03**	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.75**	**0.02**	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.08**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.18**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.04**	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC180_220406	0861_QC181_220406	0861_QC352_220406	0861_QC458_220407	0861_QC353_220407
				Sampling date / time	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00	07-Apr-2022 00:00	07-Apr-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209942-031	EB2209942-032	EB2209942-033	EB2209942-034	EB2209942-035
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**2.19**	**0.02**	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.47**	**0.02**	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**2.01**	**0.02**	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**124**	**121**	**124**	**102**	**95.3**
13C8-PFOA	----	0.02	%		**102**	**106**	**108**	**99.3**	**97.1**

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2209946**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0861_PFASOMP	Page	: 1 of 3
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 07-Apr-2022 14:00	Issue Date	: 12-Apr-2022
Client Requested Due Date	: 21-Apr-2022	Scheduled Reporting Date	: **21-Apr-2022**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 7.8°c, 8.0°c, 7.3°c, 9.7°c - Ice present
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 18 / 18

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***SRN Reissued 11/04/2022 As per email from [redacted] requesting sample IDs changed for samles 018, 008 & 007 alsong with PFAS analysis added to samples 015,016,017,018***
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2209946-001	28-Mar-2022 00:00	0861_SD039_220328	✓	✓
EB2209946-003	28-Mar-2022 00:00	0861_SD025_220328	✓	✓
EB2209946-005	28-Mar-2022 00:00	0861_SD040_220328	✓	✓
EB2209946-009	29-Mar-2022 00:00	0861_SD045_220329	✓	✓
EB2209946-011	01-Apr-2022 00:00	0861_SD098_220401	✓	✓
EB2209946-013	01-Apr-2022 00:00	0861_SD026_220401	✓	✓
EB2209946-015	04-Apr-2022 00:00	0861_SD043_220404	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2209946-002	28-Mar-2022 00:00	0861_SW039_220328	✓
EB2209946-004	28-Mar-2022 00:00	0861_SW025_220328	✓
EB2209946-006	28-Mar-2022 00:00	0861_SW040_220328	✓
EB2209946-007	29-Mar-2022 00:00	0861_MW056S_220329	✓
EB2209946-008	29-Mar-2022 00:00	0861_MW056I_220329	✓
EB2209946-010	29-Mar-2022 00:00	0861_SW045_220329	✓
EB2209946-012	01-Apr-2022 00:00	0861_SW098_220401	✓
EB2209946-014	01-Apr-2022 00:00	0861_SW026_220401	✓
EB2209946-016	04-Apr-2022 00:00	0861_SW043_220404	✓
EB2209946-017	04-Apr-2022 00:00	0861_MW057S_220404	✓
EB2209946-018	04-Apr-2022 00:00	0861_MW057I_220404	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	[redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	[redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2209946**	Page	: 1 of 15
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 07-Apr-2022
Order number	: 60612563 3.1	Date Analysis Commenced	: 11-Apr-2022
C-O-C number	: ----	Issue Date	: 21-Apr-2022
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 18		
No. of samples analysed	: 18		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
[redacted]	Senior Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4279451)									
EB2209942-001	Anonymous	EA055: Moisture Content	----	0.1	%	41.0	44.2	7.3	0% - 20%
EB2209946-009	0861_SD045_220329	EA055: Moisture Content	----	0.1	%	36.6	36.7	0.4	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4280732)									
EB2209946-015	0861_SD043_220404	EA055: Moisture Content	----	0.1	%	39.4	39.5	0.0	0% - 20%
ET2201972-022	Anonymous	EA055: Moisture Content	----	0.1	%	49.0	55.3	12.0	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4279450)									
EB2209942-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0010	0.0012	18.6	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0125	0.0148	16.7	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2209946-009	0861_SD045_220329	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0026	0.0028	6.6	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4280731)									
EB2209946-015	0861_SD043_220404	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4280731) - continued									
EB2209946-015	0861_SD043_220404	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0006	<0.0004	40.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
ET2201972-022	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0006	0.0007	20.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4279450)									
EB2209942-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0005	0.0005	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0003	<0.0003	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0005	0.0005	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2209946-009	0861_SD045_220329	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4280731)									
EB2209946-015	0861_SD043_220404	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4280731) - continued									
EB2209946-015	0861_SD043_220404	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
ET2201972-022	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4279450)									
EB2209942-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2209946-009	0861_SD045_220329	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4280731)									
EB2209946-015	0861_SD043_220404	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ET2201972-022	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4279450)									
EB2209942-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2209946-009	0861_SD045_220329	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4279450) - continued									
EB2209946-009	0861_SD045_220329	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4280731)									
EB2209946-015	0861_SD043_220404	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ET2201972-022	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4284005)									
EB2209946-018	0861_MW057I_220404	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.01	0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4284005)									
EB2209946-018	0861_MW057I_220404	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4284005)									
EB2209946-018	0861_MW057I_220404	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4284005)									
EB2209946-018	0861_MW057I_220404	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4284005)									
EB2209946-018	0861_MW057I_220404	EP231X: Sum of PFAS	----	0.01	µg/L	0.01	0.01	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.01	0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.01	0.01	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4279450)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	124	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	# 148	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	112	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	# 138	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	122	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	119	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4280731)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	105	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	102	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	99.2	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	98.7	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	95.7	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	103	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4279450)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	# 145	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	113	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	127	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	126	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	131	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	113	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	121	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	122	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	132	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	130	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	# 141	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4280731)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	103	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	93.2	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.2	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	95.6	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.0	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.0	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	64.0	136

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4280731) - continued								
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.0	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.0	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	121	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4279450)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	130	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	104	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	# 140	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	# 143	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	140	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	128	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4280731)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	99.0	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	101	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	92.3	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	99.2	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.4	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4279450)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	132	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	135	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	100	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	# 170	54.8	124
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4280731)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	115	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	117	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	113	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	112	54.8	124

Sub-Matrix: **WATER**

	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
		Spike	Spike Recovery (%)	Acceptable Limits (%)

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4281153)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	108	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	114	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	101	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	129	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	107	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	105	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4284005)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	122	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	122	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	110	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	# 136	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	125	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	135	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281153)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	108	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	112	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	126	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	111	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	105	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	118	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	115	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	116	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	124	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	111	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	121	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4284005)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	113	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	118	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	127	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	122	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	118	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	129	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	129	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	130	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	133	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	121	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	# 142	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281153)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281153) - continued								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	106	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	96.7	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	107	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	97.5	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	96.3	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	127	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	131	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4284005)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	115	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	120	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	120	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	108	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	110	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	# 152	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	134	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4281153)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	126	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	129	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	131	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	128	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4284005)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	134	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	118	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	# 140	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	# 148	64.2	133
EP231P: PFAS Sums (QCLot: 4281153)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 4284005)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231P: PFAS Sums (QCLot: 4284005) - continued								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4279450)							
EB2209942-004	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	126	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	122	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	129	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	125	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	109	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	125	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4280731)							
ET2201972-003	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	108	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	105	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	95.3	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	116	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	112	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	96.7	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4279450)							
EB2209942-004	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	134	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	129	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	122	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	117	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	118	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	123	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	107	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	120	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	109	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	112	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	121	69.0	133

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4280731)							
ET2201972-003	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	102	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	89.2	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	95.6	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	90.4	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	107	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	97.2	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	89.6	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	99.6	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	97.6	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	96.4	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	126	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4279450)							
EB2209942-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	106	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	114	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	84.3	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	128	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	124	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	120	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	126	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4280731)							
ET2201972-003	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	96.8	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	100	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	100	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	90.7	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	102	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	112	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	109	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4279450)							
EB2209942-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	144	62.0	145

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4279450) - continued							
EB2209942-004	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	139	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	116	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	114	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4280731)							
ET2201972-003	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	103	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	102	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	110	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	99.2	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4284005)							
EB2209946-018	0861_MW057I_220404	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	115	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	118	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	102	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	122	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	116	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	126	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4284005)							
EB2209946-018	0861_MW057I_220404	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	107	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	114	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	118	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	111	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	109	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	115	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	116	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	124	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	127	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	117	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	# 137	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4284005)							
EB2209946-018	0861_MW057I_220404	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	107	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	99.9	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	110	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	108	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4284005) - continued							
EB2209946-018	0861_MW057I_220404	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	105	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	# 150	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	130	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4284005)							
EB2209946-018	0861_MW057I_220404	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	124	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	105	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	126	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	128	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2209946**	Page	: 1 of 8
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 07-Apr-2022
Site	: ----	Issue Date	: 21-Apr-2022
Sampler	: ----	No. of samples received	: 18
Order number	: 60612563 3.1	No. of samples analysed	: 18

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	QC-4279450-002	----	**Perfluoropentane sulfonic acid (PFPeS)**	2706-91-4	148 %	73.0-123%	**Recovery greater than upper control limit**
EP231A: Perfluoroalkyl Sulfonic Acids	QC-4279450-002	----	**Perfluoroheptane sulfonic acid (PFHpS)**	375-92-8	138 %	70.0-132%	**Recovery greater than upper control limit**
EP231B: Perfluoroalkyl Carboxylic Acids	QC-4279450-002	----	**Perfluorobutanoic acid (PFBA)**	375-22-4	145 %	71.0-135%	**Recovery greater than upper control limit**
EP231B: Perfluoroalkyl Carboxylic Acids	QC-4279450-002	----	**Perfluorotetradecanoic acid (PFTeDA)**	376-06-7	141 %	69.0-133%	**Recovery greater than upper control limit**
EP231C: Perfluoroalkyl Sulfonamides	QC-4279450-002	----	**N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)**	24448-09-7	140 %	61.5-139%	**Recovery greater than upper control limit**
EP231C: Perfluoroalkyl Sulfonamides	QC-4279450-002	----	**N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)**	1691-99-2	143 %	61.9-137%	**Recovery greater than upper control limit**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	QC-4279450-002	----	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	170 %	54.8-124%	**Recovery greater than upper control limit**

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	QC-4284005-002	----	**Perfluoroheptane sulfonic acid (PFHpS)**	375-92-8	136 %	69.0-134%	**Recovery greater than upper control limit**
EP231B: Perfluoroalkyl Carboxylic Acids	QC-4284005-002	----	**Perfluorotetradecanoic acid (PFTeDA)**	376-06-7	142 %	71.0-132%	**Recovery greater than upper control limit**
EP231C: Perfluoroalkyl Sulfonamides	QC-4284005-002	----	**N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)**	2355-31-9	152 %	65.0-136%	**Recovery greater than upper control limit**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	QC-4284005-002	----	**8:2 Fluorotelomer sulfonic acid (8:2 FTS)**	39108-34-4	140 %	67.0-138%	**Recovery greater than upper control limit**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	QC-4284005-002	----	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	148 %	64.2-133%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries - Continued							
EP231B: Perfluoroalkyl Carboxylic Acids	EB2209946--018	0861_MW057I_220404	**Perfluorotetradecanoic acid (PFTeDA)**	376-06-7	137 %	71.0-132%	**Recovery greater than upper data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2209946--018	0861_MW057I_220404	**N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)**	2355-31-9	150 %	65.0-136%	**Recovery greater than upper data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	15	6.67	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)								
HDPE Soil Jar (EA055)								
0861_SD098_220401,	0861_SD026_220401	**01-Apr-2022**	**----**	----	----	**11-Apr-2022**	15-Apr-2022	✓
HDPE Soil Jar (EA055)								
0861_SD043_220404		**04-Apr-2022**	**----**	----	----	**11-Apr-2022**	18-Apr-2022	✓
HDPE Soil Jar (EA055)								
0861_SD039_220328, 0861_SD040_220328	0861_SD025_220328,	**28-Mar-2022**	**----**	----	----	**11-Apr-2022**	11-Apr-2022	✓
HDPE Soil Jar (EA055)								
0861_SD045_220329		**29-Mar-2022**	**----**	----	----	**11-Apr-2022**	12-Apr-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD098_220401, 0861_SD026_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD043_220404	**04-Apr-2022**	**12-Apr-2022**	01-Oct-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD039_220328, 0861_SD025_220328, 0861_SD040_220328	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD045_220329	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0861_SD098_220401, 0861_SD026_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD043_220404	**04-Apr-2022**	**12-Apr-2022**	01-Oct-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD039_220328, 0861_SD025_220328, 0861_SD040_220328	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD045_220329	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0861_SD098_220401, 0861_SD026_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD043_220404	**04-Apr-2022**	**12-Apr-2022**	01-Oct-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD039_220328, 0861_SD025_220328, 0861_SD040_220328	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD045_220329	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD098_220401, 0861_SD026_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD043_220404	**04-Apr-2022**	**12-Apr-2022**	01-Oct-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD039_220328, 0861_SD025_220328, 0861_SD040_220328	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD045_220329	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums								
HDPE Soil Jar (EP231X) 0861_SD098_220401,	0861_SD026_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD043_220404		**04-Apr-2022**	**12-Apr-2022**	01-Oct-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD039_220328, 0861_SD040_220328	0861_SD025_220328,	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD045_220329		**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X) 0861_SW098_220401,	0861_SW026_220401	**01-Apr-2022**	**13-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	28-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW043_220404, 0861_MW057I_220404	0861_MW057S_220404,	**04-Apr-2022**	**13-Apr-2022**	01-Oct-2022	✓	**13-Apr-2022**	01-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW039_220328, 0861_SW040_220328	0861_SW025_220328,	**28-Mar-2022**	**13-Apr-2022**	24-Sep-2022	✓	**13-Apr-2022**	24-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW056S_220329, 0861_SW045_220329	0861_MW056I_220329,	**29-Mar-2022**	**13-Apr-2022**	25-Sep-2022	✓	**13-Apr-2022**	25-Sep-2022	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X) 0861_SW098_220401,	0861_SW026_220401	**01-Apr-2022**	**13-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	28-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW043_220404, 0861_MW057I_220404	0861_MW057S_220404,	**04-Apr-2022**	**13-Apr-2022**	01-Oct-2022	✓	**13-Apr-2022**	01-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW039_220328, 0861_SW040_220328	0861_SW025_220328,	**28-Mar-2022**	**13-Apr-2022**	24-Sep-2022	✓	**13-Apr-2022**	24-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW056S_220329, 0861_SW045_220329	0861_MW056I_220329,	**29-Mar-2022**	**13-Apr-2022**	25-Sep-2022	✓	**13-Apr-2022**	25-Sep-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X) 0861_SW098_220401,	0861_SW026_220401	**01-Apr-2022**	**13-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	28-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW043_220404, 0861_MW057I_220404	0861_MW057S_220404,	**04-Apr-2022**	**13-Apr-2022**	01-Oct-2022	✓	**13-Apr-2022**	01-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW039_220328, 0861_SW040_220328	0861_SW025_220328,	**28-Mar-2022**	**13-Apr-2022**	24-Sep-2022	✓	**13-Apr-2022**	24-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW056S_220329, 0861_SW045_220329	0861_MW056I_220329,	**29-Mar-2022**	**13-Apr-2022**	25-Sep-2022	✓	**13-Apr-2022**	25-Sep-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X) 0861_SW098_220401,	0861_SW026_220401	**01-Apr-2022**	**13-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	28-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW043_220404, 0861_MW057I_220404	0861_MW057S_220404,	**04-Apr-2022**	**13-Apr-2022**	01-Oct-2022	✓	**13-Apr-2022**	01-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW039_220328, 0861_SW040_220328	0861_SW025_220328,	**28-Mar-2022**	**13-Apr-2022**	24-Sep-2022	✓	**13-Apr-2022**	24-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW056S_220329, 0861_SW045_220329	0861_MW056I_220329,	**29-Mar-2022**	**13-Apr-2022**	25-Sep-2022	✓	**13-Apr-2022**	25-Sep-2022	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X) 0861_SW098_220401,	0861_SW026_220401	**01-Apr-2022**	**13-Apr-2022**	28-Sep-2022	✓	**13-Apr-2022**	28-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW043_220404, 0861_MW057I_220404	0861_MW057S_220404,	**04-Apr-2022**	**13-Apr-2022**	01-Oct-2022	✓	**13-Apr-2022**	01-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW039_220328, 0861_SW040_220328	0861_SW025_220328,	**28-Mar-2022**	**13-Apr-2022**	24-Sep-2022	✓	**13-Apr-2022**	24-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW056S_220329, 0861_SW045_220329	0861_MW056I_220329,	**29-Mar-2022**	**13-Apr-2022**	25-Sep-2022	✓	**13-Apr-2022**	25-Sep-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	4	26	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	26	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	26	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	26	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	26	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	15	**13.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	15	**13.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2209946**	Page	: 1 of 13
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 07-Apr-2022 14:00
Order number	: 60612563 3.1	Date Analysis Commenced	: 11-Apr-2022
C-O-C number	: ----	Issue Date	: 21-Apr-2022 18:16
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 18		
No. of samples analysed	: 18		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
[redacted]	Senior Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X PFAS: The LOR of PFOS for sample “0861_SD043_220404” has been raised due to sample matrix interferences.
- EP231X PFAS: The high laboratory control standard recoveries are deemed acceptable as associated sample analyte results are less than the limit of reporting.
- EP231X PFAS: The high matrix spike recoveries for sample ‘0861_MW057I_220404’ (EB2209946-018) are deemed acceptable as associated sample analyte results are less than the limit of reporting.
- EP231X PFAS: The LOR of PFOS for sample ‘0861_SD098_220401’ (EB2209946-011) has been raised due to sample matrix interferences.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD039_220328	0861_SD025_220328	0861_SD040_220328	0861_SD045_220329	0861_SD098_220401
				Sampling date / time	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	29-Mar-2022 00:00	01-Apr-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209946-001	EB2209946-003	EB2209946-005	EB2209946-009	EB2209946-011
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**34.2**	**32.4**	**31.3**	**36.6**	**35.5**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	**0.0002**	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	**0.0016**	**0.0026**	<0.0035
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	**0.0002**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD039_220328	0861_SD025_220328	0861_SD040_220328	0861_SD045_220329	0861_SD098_220401
				Sampling date / time	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	29-Mar-2022 00:00	01-Apr-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209946-001	EB2209946-003	EB2209946-005	EB2209946-009	EB2209946-011
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	<0.0002	**0.0018**	**0.0026**	**0.0002**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	**0.0018**	**0.0026**	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	<0.0002	**0.0018**	**0.0026**	**0.0002**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**130**	**124**	**116**	**122**	**134**
13C8-PFOA	----	0.0002	%		**108**	**104**	**103**	**120**	**114**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD026_220401	0861_SD043_220404	----	----	----
				Sampling date / time	01-Apr-2022 00:00	04-Apr-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2209946-013	EB2209946-015	--------	--------	--------
					Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**41.1**	**39.4**	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0002**	<0.0002	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0029**	<0.0006	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD026_220401	0861_SD043_220404	----	----	----
				Sampling date / time	01-Apr-2022 00:00	04-Apr-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2209946-013	EB2209946-015	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0031**	<0.0002	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0031**	<0.0002	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0031**	<0.0002	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**120**	**122**	----	----	----
13C8-PFOA	----	0.0002	%		**114**	**102**	----	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW039_220328	0861_SW025_220328	0861_SW040_220328	0861_MW056S_220329	0861_MW056I_220329
				Sampling date / time	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00
					EB2209946-002	EB2209946-004	EB2209946-006	EB2209946-007	EB2209946-008
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.03**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**0.03**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	**0.19**	<0.01	**0.02**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	**0.16**	<0.01	**0.01**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**0.05**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.01**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW039_220328	0861_SW025_220328	0861_SW040_220328	0861_MW056S_220329	0861_MW056I_220329
				Sampling date / time	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00
					EB2209946-002	EB2209946-004	EB2209946-006	EB2209946-007	EB2209946-008
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.10**	<0.05	**0.14**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.10**	<0.01	**0.61**	<0.01	**0.03**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	**0.35**	<0.01	**0.03**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.10**	<0.01	**0.58**	<0.01	**0.03**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.6**	**103**	**104**	**92.3**	**110**
13C8-PFOA	----	0.02	%		**96.4**	**93.2**	**95.1**	**97.1**	**93.8**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW045_220329	0861_SW098_220401	0861_SW026_220401	0861_SW043_220404	0861_MW057S_220404
				Sampling date / time	29-Mar-2022 00:00	01-Apr-2022 00:00	01-Apr-2022 00:00	04-Apr-2022 00:00	04-Apr-2022 00:00
					EB2209946-010	EB2209946-012	EB2209946-014	EB2209946-016	EB2209946-017
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.12**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.09**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.09**	<0.01	<0.01	<0.01	**0.42**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.04**	**0.02**	**0.02**	<0.01	**0.25**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.02**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.09**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.02**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.04**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW045_220329	0861_SW098_220401	0861_SW026_220401	0861_SW043_220404	0861_MW057S_220404
				Sampling date / time	29-Mar-2022 00:00	01-Apr-2022 00:00	01-Apr-2022 00:00	04-Apr-2022 00:00	04-Apr-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209946-010	EB2209946-012	EB2209946-014	EB2209946-016	EB2209946-017
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.13**	**0.02**	**0.02**	<0.01	**1.05**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.13**	**0.02**	**0.02**	<0.01	**0.67**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.13**	**0.02**	**0.02**	<0.01	**0.96**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**111**	**111**	**82.2**	**99.9**	**99.2**
13C8-PFOA	----	0.02	%		**96.7**	**96.0**	**94.2**	**96.2**	**97.4**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW057I_220404	----	----	----	----
				Sampling date / time	04-Apr-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2209946-018	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.01**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW057I_220404	----	----	----	----
				Sampling date / time	04-Apr-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2209946-018	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.01**	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.01**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.01**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**93.2**	----	----	----	----
13C8-PFOA	----	0.02	%		**95.6**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2209950**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: BRISBANE	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0861_PFASOMP	Page	: 1 of 5
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 07-Apr-2022 14:00	Issue Date	: 11-Apr-2022
Client Requested Due Date	: 22-Apr-2022	Scheduled Reporting Date	: **22-Apr-2022**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 8.0°c, 9.7°c, 7.3°c, 7.8°c - Ice present
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 90 / 90

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***SRN Reissued 11/04/2022 as per emaill request from [redacted] to alter sample 91 ID and add PFAS Analysis.***
- **Please be advised that sample "0861_SD036_220401" was not received at the laboratory (denoted SNR on the scanned COC).**
- **SPLIT WORK ORDER: It should be noted that ALS has split this work order over the following work orders EB2209950/ EB2209951 due to the size of the sample numbers. For any further information regarding this processing of samples please contact ALS client services division on ALSEnviro.Brisbane@alsglobal.com**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **An extra sample was received labelled as "0861_SD034_220401" (ALS #91) and has been placed on hold. If testing is required on this sample, please contact ALS Client Services at ALSEnviro.Brisbane@alsglobal.com**
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2209950-001	28-Mar-2022 00:00	0861_SD008_220328	✓	✓
EB2209950-003	28-Mar-2022 00:00	0861_SD027_220328	✓	✓
EB2209950-005	28-Mar-2022 00:00	0861_SD011_220328	✓	✓
EB2209950-007	28-Mar-2022 00:00	0861_SD056_220328	✓	✓
EB2209950-009	28-Mar-2022 00:00	0861_SD076_220328	✓	✓
EB2209950-011	28-Mar-2022 00:00	0861_SD030_220328	✓	✓
EB2209950-013	28-Mar-2022 00:00	0861_SD002_220328	✓	✓
EB2209950-015	28-Mar-2022 00:00	0861_SD003_220328	✓	✓
EB2209950-017	28-Mar-2022 00:00	0861_SD059_220328	✓	✓
EB2209950-019	28-Mar-2022 00:00	0861_SD048_220328	✓	✓
EB2209950-021	28-Mar-2022 00:00	0861_SD041_220328	✓	✓
EB2209950-024	29-Mar-2022 00:00	0861_SD028_220329	✓	✓
EB2209950-027	29-Mar-2022 00:00	0861_SD004_220329	✓	✓
EB2209950-029	29-Mar-2022 00:00	0861_SD005_220329	✓	✓
EB2209950-031	29-Mar-2022 00:00	0861_SD009_220329	✓	✓
EB2209950-033	29-Mar-2022 00:00	0861_SD016_220329	✓	✓
EB2209950-035	29-Mar-2022 00:00	0861_SD015_220329	✓	✓
EB2209950-037	29-Mar-2022 00:00	0861_SD034_220329	✓	✓
EB2209950-039	29-Mar-2022 00:00	0861_SD018_220329	✓	✓
EB2209950-041	29-Mar-2022 00:00	0861_SD020_220329	✓	✓
EB2209950-043	30-Mar-2022 00:00	0861_SD038_220330	✓	✓
EB2209950-045	30-Mar-2022 00:00	0861_SD037_220330	✓	✓
EB2209950-053	31-Mar-2022 00:00	0861_SD049_220331	✓	✓
EB2209950-055	31-Mar-2022 00:00	0861_SD021_220331	✓	✓
EB2209950-057	31-Mar-2022 00:00	0861_SD089_220331	✓	✓
EB2209950-058	31-Mar-2022 00:00	0861_SD090_220331	✓	✓
EB2209950-059	31-Mar-2022 00:00	0861_SD091_220331	✓	✓
EB2209950-064	31-Mar-2022 00:00	0861_SD052_220331	✓	✓
EB2209950-065	31-Mar-2022 00:00	0861_SD088_220331	✓	✓
EB2209950-069	31-Mar-2022 00:00	0861_SD047_220331	✓	✓
EB2209950-075	01-Apr-2022 00:00	0861_SD051_220401	✓	✓
EB2209950-078	01-Apr-2022 00:00	0861_SD094_220401	✓	✓
EB2209950-082	01-Apr-2022 00:00	0861_SD050_220401	✓	✓
EB2209950-084	04-Apr-2022 00:00	0861_MW035_220404	✓	✓
EB2209950-089	05-Apr-2022 00:00	0861_SD033_220405	✓	✓

			SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2209950-091	01-Apr-2022 00:00	0861_SD036_220401	✓	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2209950-002	28-Mar-2022 00:00	0861_SW008_220328	✓
EB2209950-004	28-Mar-2022 00:00	0861_SW027_220328	✓
EB2209950-006	28-Mar-2022 00:00	0861_SW011_220328	✓
EB2209950-008	28-Mar-2022 00:00	0861_SW056_220328	✓
EB2209950-010	28-Mar-2022 00:00	0861_SW076_220328	✓
EB2209950-012	28-Mar-2022 00:00	0861_SW030_220328	✓
EB2209950-014	28-Mar-2022 00:00	0861_SW002_220328	✓
EB2209950-016	28-Mar-2022 00:00	0861_SW003_220328	✓
EB2209950-018	28-Mar-2022 00:00	0861_SW059_220328	✓
EB2209950-020	28-Mar-2022 00:00	0861_SW048_220328	✓
EB2209950-022	28-Mar-2022 00:00	0861_SW041_220328	✓
EB2209950-023	29-Mar-2022 00:00	0861_SW028_220329	✓
EB2209950-025	29-Mar-2022 00:00	0861_MW048_220329	✓
EB2209950-026	29-Mar-2022 00:00	0861_SW004_220329	✓
EB2209950-028	29-Mar-2022 00:00	0861_SW005_220329	✓
EB2209950-030	29-Mar-2022 00:00	0861_SW009_220329	✓
EB2209950-032	29-Mar-2022 00:00	0861_SW016_220329	✓
EB2209950-034	29-Mar-2022 00:00	0861_SW015_220329	✓
EB2209950-036	29-Mar-2022 00:00	0861_SW034_220329	✓
EB2209950-038	29-Mar-2022 00:00	0861_SW018_220329	✓
EB2209950-040	29-Mar-2022 00:00	0861_SW020_220329	✓
EB2209950-042	30-Mar-2022 00:00	0861_SW038_220330	✓
EB2209950-044	30-Mar-2022 00:00	0861_SW037_220330	✓
EB2209950-046	30-Mar-2022 00:00	0861_MW046_220330	✓
EB2209950-047	30-Mar-2022 00:00	0861_MW037_220330	✓
EB2209950-048	30-Mar-2022 00:00	0861_MW047_220330	✓
EB2209950-049	30-Mar-2022 00:00	0861_MW050_220330	✓
EB2209950-050	30-Mar-2022 00:00	0861_MW021_220330	✓

			WATER - EP231X PFAS - Full Suite (28 analytes)
EB2209950-051	30-Mar-2022 00:00	0861_MW022_220330	✓
EB2209950-052	30-Mar-2022 00:00	0861_MW309_220330	✓
EB2209950-054	31-Mar-2022 00:00	0861_SW049_220331	✓
EB2209950-056	31-Mar-2022 00:00	0861_SW021_220331	✓
EB2209950-060	31-Mar-2022 00:00	0861_SW089_220331	✓
EB2209950-061	31-Mar-2022 00:00	0861_SW090_220331	✓
EB2209950-062	31-Mar-2022 00:00	0861_SW091_220331	✓
EB2209950-063	31-Mar-2022 00:00	0861_SW052_220331	✓
EB2209950-066	31-Mar-2022 00:00	0861_SW088_220331	✓
EB2209950-067	31-Mar-2022 00:00	0861_MW002_220331	✓
EB2209950-068	31-Mar-2022 00:00	0861_SW047_220331	✓
EB2209950-070	01-Apr-2022 00:00	0861_MW030_220401	✓
EB2209950-071	01-Apr-2022 00:00	0861_MW031_220401	✓
EB2209950-072	01-Apr-2022 00:00	0861_MW034_220401	✓
EB2209950-073	01-Apr-2022 00:00	0861_MW044_220401	✓
EB2209950-074	01-Apr-2022 00:00	0861_SW051_220401	✓
EB2209950-076	01-Apr-2022 00:00	0861_MW055D_220401	✓
EB2209950-077	01-Apr-2022 00:00	0861_MW055S_220401	✓
EB2209950-079	01-Apr-2022 00:00	0861_SW094_220401	✓
EB2209950-081	01-Apr-2022 00:00	0861_SW036_220401	✓
EB2209950-083	01-Apr-2022 00:00	0861_SW050_220401	✓
EB2209950-085	04-Apr-2022 00:00	0861_MW024_220404	✓
EB2209950-086	04-Apr-2022 00:00	0861_MW036_220404	✓
EB2209950-087	04-Apr-2022 00:00	0861_MW028_220404	✓
EB2209950-088	04-Apr-2022 00:00	0861_MW029_220404	✓
EB2209950-090	05-Apr-2022 00:00	0861_SW033_220405	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	[redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	[redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2209950**	Page	: 1 of 29
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: BRISBANE	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 07-Apr-2022
Order number	: 60612563 3.1	Date Analysis Commenced	: 11-Apr-2022
C-O-C number	: ----	Issue Date	: 27-Apr-2022
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 90		
No. of samples analysed	: 90		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Inorganics, Stafford, QLD
	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4279444)									
EB2209950-001	0861_SD008_220328	EA055: Moisture Content	----	0.1	%	43.7	43.7	0.0	0% - 20%
EB2209950-021	0861_SD041_220328	EA055: Moisture Content	----	0.1	%	61.0	67.7	10.5	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4279446)									
EB2209950-043	0861_SD038_220330	EA055: Moisture Content	----	0.1	%	34.6	35.6	2.6	0% - 20%
EB2209950-075	0861_SD051_220401	EA055: Moisture Content	----	0.1	%	31.0	31.1	0.3	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4280730)									
EB2209950-091	0861_SD036_220401	EA055: Moisture Content	----	0.1	%	28.4	26.6	6.7	0% - 20%
EB2209991-012	Anonymous	EA055: Moisture Content	----	0.1	%	26.6	26.2	1.4	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4279443)									
EB2209950-001	0861_SD008_220328	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2209950-021	0861_SD041_220328	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0010	0.0010	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0005	85.7	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4279445)									
EB2209950-043	0861_SD038_220330	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4279445) - continued									
EB2209950-043	0861_SD038_220330	EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2209950-075	0861_SD051_220401	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0004	0.0005	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4280729)									
EB2209950-091	0861_SD036_220401	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0008	<0.0028	111	No Limit
EB2209991-012	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4279443)									
EB2209950-001	0861_SD008_220328	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2209950-021	0861_SD041_220328	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0002	0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4279443) - continued									
EB2209950-021	0861_SD041_220328	EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4279445)									
EB2209950-043	0861_SD038_220330	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2209950-075	0861_SD051_220401	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4280729)									
EB2209950-091	0861_SD036_220401	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4280729) - continued									
EB2209950-091	0861_SD036_220401	EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2209991-012	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4279443)									
EB2209950-001	0861_SD008_220328	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2209950-021	0861_SD041_220328	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4279445)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4279445) - continued									
EB2209950-043	0861_SD038_220330	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2209950-075	0861_SD051_220401	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4280729)									
EB2209950-091	0861_SD036_220401	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2209991-012	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4280729) - continued									
EB2209991-012	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4279443)									
EB2209950-001	0861_SD008_220328	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2209950-021	0861_SD041_220328	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4279445)									
EB2209950-043	0861_SD038_220330	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2209950-075	0861_SD051_220401	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4279445) - continued									
EB2209950-075	0861_SD051_220401	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4280729)									
EB2209950-091	0861_SD036_220401	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2209991-012	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4281155)									
EB2209950-014	0861_SW002_220328	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.61	0.57	7.5	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	1.02	1.09	7.3	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.10	0.09	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.08	0.07	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EB2209950-018	0861_SW059_220328	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.66	0.56	16.4	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.92	0.86	6.3	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.13	0.12	9.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.11	0.09	20.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.03	0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4281156)									
EB2209950-047	0861_MW037_220330	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	1.75	1.76	0.6	0% - 20%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4281156) - continued									
EB2209950-047	0861_MW037_220330	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	2.51	2.57	2.4	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.55	0.54	2.8	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.40	0.40	0.0	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.07	0.07	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4281158)									
EB2209950-067	0861_MW002_220331	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4297827)									
EB2210614-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4281155)									
EB2209950-014	0861_SW002_220328	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.19	0.19	0.0	0% - 50%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.34	0.35	0.0	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.38	0.37	0.0	0% - 50%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.16	0.16	6.4	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	0.05	0.04	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.2	0.2	0.0	No Limit
EB2209950-018	0861_SW059_220328	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.07	0.07	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.15	0.12	23.4	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.23	0.20	14.4	0% - 50%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.06	0.05	17.3	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4281155) - continued									
EB2209950-018	0861_SW059_220328	EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4281156)									
EB2209950-047	0861_MW037_220330	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.08	0.08	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.08	0.08	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.42	0.40	0.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.05	0.05	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4281158)									
EB2209950-067	0861_MW002_220331	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4297827)									
EB2210614-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4281155)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4281155) - continued									
EB2209950-014	0861_SW002_220328	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2209950-018	0861_SW059_220328	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4281156)									
EB2209950-047	0861_MW037_220330	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4281158)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4281158) - continued									
EB2209950-067	0861_MW002_220331	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4297827)									
EB2210614-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4281155)									
EB2209950-014	0861_SW002_220328	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.08	0.07	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2209950-018	0861_SW059_220328	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4281155) - continued									
EB2209950-018	0861_SW059_220328	EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4281156)									
EB2209950-047	0861_MW037_220330	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4281158)									
EB2209950-067	0861_MW002_220331	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4297827)									
EB2210614-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4281155)									
EB2209950-014	0861_SW002_220328	EP231X: Sum of PFAS	----	0.01	µg/L	3.24	3.23	0.3	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	1.63	1.66	1.8	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	3.08	3.09	0.3	0% - 20%
EB2209950-018	0861_SW059_220328	EP231X: Sum of PFAS	----	0.01	µg/L	2.36	2.09	12.1	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	1.58	1.42	10.7	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	2.22	1.98	11.4	0% - 20%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231P: PFAS Sums (QC Lot: 4281156)									
EB2209950-047	0861_MW037_220330	EP231X: Sum of PFAS	----	0.01	µg/L	5.91	5.95	0.7	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	4.26	4.33	1.6	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	5.44	5.48	0.7	0% - 20%
EP231P: PFAS Sums (QC Lot: 4281158)									
EB2209950-067	0861_MW002_220331	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4297827)									
EB2210614-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4279443)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	121	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	116	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	128	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	124	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	130	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	119	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4279445)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	85.4	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	87.2	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	85.2	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	84.9	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	95.7	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	72.1	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4280729)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	125	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	104	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	125	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	105	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	111	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	108	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4279443)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	125	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	107	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	113	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	114	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	123	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.2	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	114	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	125	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4279445)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	78.8	71.0	135

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4279445) - continued								
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	74.8	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	78.0	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	82.4	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.4	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.4	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	78.0	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	73.2	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	74.0	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	74.0	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	79.5	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4280729)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	118	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.4	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	115	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	128	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	118	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	100	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	109	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.6	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	95.6	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	119	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4279443)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	127	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	109	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	109	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	128	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	125	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	125	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4279445)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	90.5	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	83.5	62.8	140

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4279445) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	71.6	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	74.7	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	82.0	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	71.2	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4280729)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	118	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	112	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	113	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	116	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	122	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	122	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	110	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4279443)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	119	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	115	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	91.2	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	117	54.8	124
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4279445)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	70.5	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	97.9	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	74.6	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	100	54.8	124
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4280729)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	115	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	125	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	110	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	110	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4281155)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	104	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	103	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	102	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	114	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	103	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	104	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4281156)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	129	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	115	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	115	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	121	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	137	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	112	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4281158)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	130	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	126	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	128	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	129	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	123	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	130	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4281160)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	127	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	127	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	115	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	129	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	126	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	142	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4297827)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	125	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	124	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	111	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	118	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	139	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	132	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281155)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	92.4	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	108	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	106	72.0	129

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281155) - continued								
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	112	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	110	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	98.0	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	97.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	109	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	99.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	100	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	102	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281156)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	119	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	117	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	117	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	123	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	121	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	117	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	115	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	119	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	111	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	111	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	120	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281158)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	114	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	119	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	120	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	128	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	129	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	120	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	126	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	122	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	121	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	122	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	130	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281160)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	127	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	126	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	121	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	126	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	132	71.0	133

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281160) - continued								
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	124	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	126	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	124	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	124	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	124	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4297827)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	117	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	121	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	122	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	124	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	124	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	121	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	120	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	125	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	131	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	125	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	130	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281155)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	97.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	110	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	104	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	92.9	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	102	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	100	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	94.2	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281156)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	120	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	128	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	104	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	106	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	110	62.6	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281156) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	117	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	127	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281158)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	134	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	126	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	111	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	130	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	118	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	134	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	117	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281160)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	124	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	130	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	122	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	115	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	116	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	134	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	123	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4297827)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	116	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	130	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	114	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	131	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	115	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	110	65.0	136

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4297827) - continued								
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	109	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4281155)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	113	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	118	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	99.2	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	98.5	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4281156)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	127	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	114	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	128	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	111	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4281158)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	137	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	126	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	136	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	132	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4281160)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	134	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	129	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	132	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	124	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4297827)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	140	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	138	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	125	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	129	64.2	133
EP231P: PFAS Sums (QCLot: 4281155)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 4281156)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 4281158)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231P: PFAS Sums (QCLot: 4281158) - continued								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 4281160)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 4297827)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4279443)							
EB2209950-003	0861_SD027_220328	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	105	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	116	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	# Not Determined	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	75.8	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	104	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4279445)							
EB2209950-045	0861_SD037_220330	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	# Not Determined	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	# Not Determined	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	# Not Determined	67.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4279445) - continued							
EB2209950-045	0861_SD037_220330	EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	# 1.5	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4280729)							
EB2209987-003	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	110	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	97.0	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	114	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	91.2	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	97.0	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	80.0	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4279443)							
EB2209950-003	0861_SD027_220328	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	100	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	104	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	116	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	100	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	108	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	92.0	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	92.0	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	120	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	76.1	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	120	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	106	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4279445)							
EB2209950-045	0861_SD037_220330	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	# 1.2	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	# Not Determined	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	# Not Determined	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	# Not Determined	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	# 1.0	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	# Not Determined	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	# 16.9	64.0	136

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4279445) - continued							
EB2209950-045	0861_SD037_220330	EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	# Not Determined	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	# 18.2	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	# 26.1	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4280729)							
EB2209987-003	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	113	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	93.6	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	102	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	105	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	114	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	112	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	96.0	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	98.4	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	92.8	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	101	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	117	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4279443)							
EB2209950-003	0861_SD027_220328	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	108	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	73.7	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	106	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	102	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	97.8	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	88.0	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	64.0	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4279445)							
EB2209950-045	0861_SD037_220330	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	# 2.6	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	# 5.1	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	# 21.1	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	# 4.3	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	# 30.2	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4279445) - continued							
EB2209950-045	0861_SD037_220330	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	# 13.3	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	# 4.0	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4280729)							
EB2209987-003	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	105	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	112	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	99.4	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	112	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	121	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	97.2	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	108	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4279443)							
EB2209950-003	0861_SD027_220328	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	81.2	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	76.3	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	129	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	70.8	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4279445)							
EB2209950-045	0861_SD037_220330	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	# 27.3	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	# 24.4	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	# 13.9	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	# Not Determined	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4280729)							
EB2209987-003	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	110	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	110	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	101	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	92.5	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4281155)							
EB2209950-014	0861_SW002_220328	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	129	72.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4281155) - continued							
EB2209950-014	0861_SW002_220328	EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	127	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	113	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	132	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	# Not Determined	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	126	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4281156)							
EB2209950-047	0861_MW037_220330	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	72.0	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	123	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	# Not Determined	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	123	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	# Not Determined	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	128	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4297827)							
EB2210614-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	130	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	125	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	118	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	113	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	119	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	110	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281155)							
EB2209950-014	0861_SW002_220328	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	97.9	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	122	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	105	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	98.0	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	126	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	104	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	108	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	131	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	127	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	130	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	113	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281156)							
EB2209950-047	0861_MW037_220330	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	120	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	107	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	108	72.0	129

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281156) - continued							
EB2209950-047	0861_MW037_220330	EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	109	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	114	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	117	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	100	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	106	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	107	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	97.6	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	108	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4297827)							
EB2210614-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	104	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	118	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	121	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	116	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	126	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	119	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	114	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	126	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	127	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	124	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	123	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281155)							
EB2209950-014	0861_SW002_220328	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	115	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	117	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	102	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	111	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	112	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	121	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	110	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281156)							
EB2209950-047	0861_MW037_220330	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	108	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	115	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	103	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281156) - continued							
EB2209950-047	0861_MW037_220330	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	111	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	96.2	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	114	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	103	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4297827)							
EB2210614-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	120	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	121	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	119	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	114	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	114	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	119	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	127	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4281155)							
EB2209950-014	0861_SW002_220328	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	110	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	120	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	88.7	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	116	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4281156)							
EB2209950-047	0861_MW037_220330	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	107	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	102	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	123	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	117	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4297827)							
EB2210614-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	119	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	124	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	114	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	119	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2209950**	Page	: 1 of 16
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 07-Apr-2022
Site	: ----	Issue Date	: 27-Apr-2022
Sampler	: ----	No. of samples received	: 90
Order number	: 60612563 3.1	No. of samples analysed	: 90

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2209950--003	0861_SD027_220328	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2209950--045	0861_SD037_220330	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2209950--003	0861_SD027_220328	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2209950--045	0861_SD037_220330	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2209950--045	0861_SD037_220330	**Perfluorodecane sulfonic acid (PFDS)**	335-77-3	1.5 %	59.0-134%	**Recovery less than lower data quality objective**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2209950--045	0861_SD037_220330	**Perfluorobutanoic acid (PFBA)**	375-22-4	1.2 %	71.0-135%	**Recovery less than lower data quality objective**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2209950--045	0861_SD037_220330	**Perfluorononanoic acid (PFNA)**	375-95-1	1.0 %	72.0-129%	**Recovery less than lower data quality objective**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2209950--045	0861_SD037_220330	**Perfluoroundecanoic acid (PFUnDA)**	2058-94-8	16.9 %	64.0-136%	**Recovery less than lower data quality objective**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2209950--045	0861_SD037_220330	**Perfluorotridecanoic acid (PFTrDA)**	72629-94-8	18.2 %	66.0-139%	**Recovery less than lower data quality objective**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2209950--045	0861_SD037_220330	**Perfluorotetradecanoic acid (PFTeDA)**	376-06-7	26.1 %	69.0-133%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2209950--045	0861_SD037_220330	**Perfluorooctane sulfonamide (FOSA)**	754-91-6	2.6 %	48.0-128%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2209950--045	0861_SD037_220330	**N-Methyl perfluorooctane sulfonamide (MeFOSA)**	31506-32-8	5.1 %	70.0-130%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2209950--045	0861_SD037_220330	**N-Ethyl perfluorooctane sulfonamide (EtFOSA)**	4151-50-2	21.1 %	70.0-130%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2209950--045	0861_SD037_220330	**N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)**	24448-09-7	4.3 %	70.0-130%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2209950--045	0861_SD037_220330	**N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)**	1691-99-2	30.2 %	70.0-130%	**Recovery less than lower data quality objective**

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries - Continued							
EP231C: Perfluoroalkyl Sulfonamides	EB2209950--045	0861_SD037_220330	**N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)**	2355-31-9	13.3 %	63.0-144%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2209950--045	0861_SD037_220330	**N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)**	2991-50-6	4.0 %	61.0-139%	**Recovery less than lower data quality objective**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	EB2209950--045	0861_SD037_220330	**4:2 Fluorotelomer sulfonic acid (4:2 FTS)**	757124-72-4	27.3 %	62.0-145%	**Recovery less than lower data quality objective**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	EB2209950--045	0861_SD037_220330	**6:2 Fluorotelomer sulfonic acid (6:2 FTS)**	27619-97-2	24.4 %	64.0-140%	**Recovery less than lower data quality objective**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	EB2209950--045	0861_SD037_220330	**8:2 Fluorotelomer sulfonic acid (8:2 FTS)**	39108-34-4	13.9 %	65.0-137%	**Recovery less than lower data quality objective**

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2209950--047	0861_MW037_220330	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2209950--014	0861_SW002_220328	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2209950--047	0861_MW037_220330	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	5	68	7.35	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	3	68	4.41	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055)							
0861_SD051_220401, 0861_SD094_220401, 0861_SD050_220401, 0861_SD036_220401	**01-Apr-2022**	**----**	----	----	**11-Apr-2022**	15-Apr-2022	✓
HDPE Soil Jar (EA055)							
0861_SD033_220405	**05-Apr-2022**	**----**	----	----	**11-Apr-2022**	19-Apr-2022	✓
HDPE Soil Jar (EA055)							
0861_SD008_220328, 0861_SD027_220328, 0861_SD011_220328, 0861_SD056_220328, 0861_SD076_220328, 0861_SD030_220328, 0861_SD002_220328, 0861_SD003_220328, 0861_SD059_220328, 0861_SD048_220328, 0861_SD041_220328	**28-Mar-2022**	**----**	----	----	**11-Apr-2022**	11-Apr-2022	✓
HDPE Soil Jar (EA055)							
0861_SD028_220329, 0861_SD004_220329, 0861_SD005_220329, 0861_SD009_220329, 0861_SD016_220329, 0861_SD015_220329, 0861_SD034_220329, 0861_SD018_220329, 0861_SD020_220329	**29-Mar-2022**	**----**	----	----	**11-Apr-2022**	12-Apr-2022	✓
HDPE Soil Jar (EA055)							
0861_SD038_220330, 0861_SD037_220330	**30-Mar-2022**	**----**	----	----	**11-Apr-2022**	13-Apr-2022	✓
HDPE Soil Jar (EA055)							
0861_SD049_220331, 0861_SD021_220331, 0861_SD089_220331, 0861_SD090_220331, 0861_SD091_220331, 0861_SD052_220331, 0861_SD088_220331, 0861_SD047_220331	**31-Mar-2022**	**----**	----	----	**11-Apr-2022**	14-Apr-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD051_220401, 0861_SD094_220401, 0861_SD050_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD036_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**19-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD033_220405	**05-Apr-2022**	**12-Apr-2022**	02-Oct-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD008_220328, 0861_SD027_220328, 0861_SD011_220328, 0861_SD056_220328, 0861_SD076_220328, 0861_SD030_220328, 0861_SD002_220328, 0861_SD003_220328, 0861_SD059_220328, 0861_SD048_220328, 0861_SD041_220328	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**19-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD028_220329, 0861_SD004_220329, 0861_SD005_220329, 0861_SD009_220329, 0861_SD016_220329, 0861_SD015_220329, 0861_SD034_220329, 0861_SD018_220329, 0861_SD020_220329	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**19-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD038_220330, 0861_SD037_220330	**30-Mar-2022**	**12-Apr-2022**	26-Sep-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD049_220331, 0861_SD021_220331, 0861_SD089_220331, 0861_SD090_220331, 0861_SD091_220331, 0861_SD052_220331, 0861_SD088_220331, 0861_SD047_220331	**31-Mar-2022**	**12-Apr-2022**	27-Sep-2022	✓	**14-Apr-2022**	22-May-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0861_SD051_220401, 0861_SD094_220401, 0861_SD050_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD036_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**19-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD033_220405	**05-Apr-2022**	**12-Apr-2022**	02-Oct-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD008_220328, 0861_SD027_220328, 0861_SD011_220328, 0861_SD056_220328, 0861_SD076_220328, 0861_SD030_220328, 0861_SD002_220328, 0861_SD003_220328, 0861_SD059_220328, 0861_SD048_220328, 0861_SD041_220328	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**19-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD028_220329, 0861_SD004_220329, 0861_SD005_220329, 0861_SD009_220329, 0861_SD016_220329, 0861_SD015_220329, 0861_SD034_220329, 0861_SD018_220329, 0861_SD020_220329	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**19-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD038_220330, 0861_SD037_220330	**30-Mar-2022**	**12-Apr-2022**	26-Sep-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD049_220331, 0861_SD021_220331, 0861_SD089_220331, 0861_SD090_220331, 0861_SD091_220331, 0861_SD052_220331, 0861_SD088_220331, 0861_SD047_220331	**31-Mar-2022**	**12-Apr-2022**	27-Sep-2022	✓	**14-Apr-2022**	22-May-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0861_SD051_220401, 0861_SD094_220401, 0861_SD050_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD036_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**19-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD033_220405	**05-Apr-2022**	**12-Apr-2022**	02-Oct-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD008_220328, 0861_SD027_220328, 0861_SD011_220328, 0861_SD056_220328, 0861_SD076_220328, 0861_SD030_220328, 0861_SD002_220328, 0861_SD003_220328, 0861_SD059_220328, 0861_SD048_220328, 0861_SD041_220328	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**19-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD028_220329, 0861_SD004_220329, 0861_SD005_220329, 0861_SD009_220329, 0861_SD016_220329, 0861_SD015_220329, 0861_SD034_220329, 0861_SD018_220329, 0861_SD020_220329	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**19-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD038_220330, 0861_SD037_220330	**30-Mar-2022**	**12-Apr-2022**	26-Sep-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD049_220331, 0861_SD021_220331, 0861_SD089_220331, 0861_SD090_220331, 0861_SD091_220331, 0861_SD052_220331, 0861_SD088_220331, 0861_SD047_220331	**31-Mar-2022**	**12-Apr-2022**	27-Sep-2022	✓	**14-Apr-2022**	22-May-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD051_220401, 0861_SD094_220401, 0861_SD050_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD036_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**19-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD033_220405	**05-Apr-2022**	**12-Apr-2022**	02-Oct-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD008_220328, 0861_SD027_220328, 0861_SD011_220328, 0861_SD056_220328, 0861_SD076_220328, 0861_SD030_220328, 0861_SD002_220328, 0861_SD003_220328, 0861_SD059_220328, 0861_SD048_220328, 0861_SD041_220328	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**19-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD028_220329, 0861_SD004_220329, 0861_SD005_220329, 0861_SD009_220329, 0861_SD016_220329, 0861_SD015_220329, 0861_SD034_220329, 0861_SD018_220329, 0861_SD020_220329	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**19-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD038_220330, 0861_SD037_220330	**30-Mar-2022**	**12-Apr-2022**	26-Sep-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD049_220331, 0861_SD021_220331, 0861_SD089_220331, 0861_SD090_220331, 0861_SD091_220331, 0861_SD052_220331, 0861_SD088_220331, 0861_SD047_220331	**31-Mar-2022**	**12-Apr-2022**	27-Sep-2022	✓	**14-Apr-2022**	22-May-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0861_SD051_220401, 0861_SD094_220401, 0861_SD050_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD036_220401	**01-Apr-2022**	**12-Apr-2022**	28-Sep-2022	✓	**19-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD033_220405	**05-Apr-2022**	**12-Apr-2022**	02-Oct-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD008_220328, 0861_SD027_220328, 0861_SD011_220328, 0861_SD056_220328, 0861_SD076_220328, 0861_SD030_220328, 0861_SD002_220328, 0861_SD003_220328, 0861_SD059_220328, 0861_SD048_220328, 0861_SD041_220328	**28-Mar-2022**	**12-Apr-2022**	24-Sep-2022	✓	**19-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD028_220329, 0861_SD004_220329, 0861_SD005_220329, 0861_SD009_220329, 0861_SD016_220329, 0861_SD015_220329, 0861_SD034_220329, 0861_SD018_220329, 0861_SD020_220329	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**19-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD038_220330, 0861_SD037_220330	**30-Mar-2022**	**12-Apr-2022**	26-Sep-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD049_220331, 0861_SD021_220331, 0861_SD089_220331, 0861_SD090_220331, 0861_SD091_220331, 0861_SD052_220331, 0861_SD088_220331, 0861_SD047_220331	**31-Mar-2022**	**12-Apr-2022**	27-Sep-2022	✓	**14-Apr-2022**	22-May-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_MW030_220401, 0861_MW031_220401, 0861_MW034_220401, 0861_MW044_220401, 0861_SW051_220401, 0861_MW055D_220401, 0861_MW055S_220401, 0861_SW094_220401, 0861_SW036_220401, 0861_SW050_220401	**01-Apr-2022**	**21-Apr-2022**	28-Sep-2022	✓	**21-Apr-2022**	28-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW024_220404, 0861_MW036_220404, 0861_MW028_220404, 0861_MW029_220404	**04-Apr-2022**	**21-Apr-2022**	01-Oct-2022	✓	**21-Apr-2022**	01-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW035_220404	**04-Apr-2022**	**22-Apr-2022**	01-Oct-2022	✓	**22-Apr-2022**	01-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW033_220405	**05-Apr-2022**	**21-Apr-2022**	02-Oct-2022	✓	**21-Apr-2022**	02-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW008_220328, 0861_SW027_220328, 0861_SW011_220328, 0861_SW056_220328, 0861_SW076_220328, 0861_SW030_220328, 0861_SW002_220328, 0861_SW003_220328, 0861_SW059_220328, 0861_SW048_220328, 0861_SW041_220328	**28-Mar-2022**	**20-Apr-2022**	24-Sep-2022	✓	**21-Apr-2022**	24-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW028_220329, 0861_MW048_220329, 0861_SW004_220329, 0861_SW005_220329, 0861_SW009_220329, 0861_SW016_220329, 0861_SW015_220329, 0861_SW034_220329, 0861_SW018_220329, 0861_SW020_220329	**29-Mar-2022**	**20-Apr-2022**	25-Sep-2022	✓	**21-Apr-2022**	25-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW038_220330, 0861_SW037_220330, 0861_MW046_220330, 0861_MW037_220330, 0861_MW047_220330, 0861_MW050_220330, 0861_MW021_220330, 0861_MW022_220330, 0861_MW309_220330	**30-Mar-2022**	**20-Apr-2022**	26-Sep-2022	✓	**21-Apr-2022**	26-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW049_220331, 0861_SW021_220331, 0861_SW089_220331, 0861_SW090_220331, 0861_SW091_220331, 0861_SW052_220331, 0861_SW088_220331, 0861_MW002_220331, 0861_SW047_220331	**31-Mar-2022**	**21-Apr-2022**	27-Sep-2022	✓	**21-Apr-2022**	27-Sep-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0861_MW030_220401, 0861_MW031_220401, 0861_MW034_220401, 0861_MW044_220401, 0861_SW051_220401, 0861_MW055D_220401, 0861_MW055S_220401, 0861_SW094_220401, 0861_SW036_220401, 0861_SW050_220401	**01-Apr-2022**	**21-Apr-2022**	28-Sep-2022	✓	**21-Apr-2022**	28-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW024_220404, 0861_MW036_220404, 0861_MW028_220404, 0861_MW029_220404	**04-Apr-2022**	**21-Apr-2022**	01-Oct-2022	✓	**21-Apr-2022**	01-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW035_220404	**04-Apr-2022**	**22-Apr-2022**	01-Oct-2022	✓	**22-Apr-2022**	01-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW033_220405	**05-Apr-2022**	**21-Apr-2022**	02-Oct-2022	✓	**21-Apr-2022**	02-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW008_220328, 0861_SW027_220328, 0861_SW011_220328, 0861_SW056_220328, 0861_SW076_220328, 0861_SW030_220328, 0861_SW002_220328, 0861_SW003_220328, 0861_SW059_220328, 0861_SW048_220328, 0861_SW041_220328	**28-Mar-2022**	**20-Apr-2022**	24-Sep-2022	✓	**21-Apr-2022**	24-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW028_220329, 0861_MW048_220329, 0861_SW004_220329, 0861_SW005_220329, 0861_SW009_220329, 0861_SW016_220329, 0861_SW015_220329, 0861_SW034_220329, 0861_SW018_220329, 0861_SW020_220329	**29-Mar-2022**	**20-Apr-2022**	25-Sep-2022	✓	**21-Apr-2022**	25-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW038_220330, 0861_SW037_220330, 0861_MW046_220330, 0861_MW037_220330, 0861_MW047_220330, 0861_MW050_220330, 0861_MW021_220330, 0861_MW022_220330, 0861_MW309_220330	**30-Mar-2022**	**20-Apr-2022**	26-Sep-2022	✓	**21-Apr-2022**	26-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW049_220331, 0861_SW021_220331, 0861_SW089_220331, 0861_SW090_220331, 0861_SW091_220331, 0861_SW052_220331, 0861_SW088_220331, 0861_MW002_220331, 0861_SW047_220331	**31-Mar-2022**	**21-Apr-2022**	27-Sep-2022	✓	**21-Apr-2022**	27-Sep-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0861_MW030_220401, 0861_MW031_220401, 0861_MW034_220401, 0861_MW044_220401, 0861_SW051_220401, 0861_MW055D_220401, 0861_MW055S_220401, 0861_SW094_220401, 0861_SW036_220401, 0861_SW050_220401	**01-Apr-2022**	**21-Apr-2022**	28-Sep-2022	✓	**21-Apr-2022**	28-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW024_220404, 0861_MW036_220404, 0861_MW028_220404, 0861_MW029_220404	**04-Apr-2022**	**21-Apr-2022**	01-Oct-2022	✓	**21-Apr-2022**	01-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW035_220404	**04-Apr-2022**	**22-Apr-2022**	01-Oct-2022	✓	**22-Apr-2022**	01-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW033_220405	**05-Apr-2022**	**21-Apr-2022**	02-Oct-2022	✓	**21-Apr-2022**	02-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW008_220328, 0861_SW027_220328, 0861_SW011_220328, 0861_SW056_220328, 0861_SW076_220328, 0861_SW030_220328, 0861_SW002_220328, 0861_SW003_220328, 0861_SW059_220328, 0861_SW048_220328, 0861_SW041_220328	**28-Mar-2022**	**20-Apr-2022**	24-Sep-2022	✓	**21-Apr-2022**	24-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW028_220329, 0861_MW048_220329, 0861_SW004_220329, 0861_SW005_220329, 0861_SW009_220329, 0861_SW016_220329, 0861_SW015_220329, 0861_SW034_220329, 0861_SW018_220329, 0861_SW020_220329	**29-Mar-2022**	**20-Apr-2022**	25-Sep-2022	✓	**21-Apr-2022**	25-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW038_220330, 0861_SW037_220330, 0861_MW046_220330, 0861_MW037_220330, 0861_MW047_220330, 0861_MW050_220330, 0861_MW021_220330, 0861_MW022_220330, 0861_MW309_220330	**30-Mar-2022**	**20-Apr-2022**	26-Sep-2022	✓	**21-Apr-2022**	26-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW049_220331, 0861_SW021_220331, 0861_SW089_220331, 0861_SW090_220331, 0861_SW091_220331, 0861_SW052_220331, 0861_SW088_220331, 0861_MW002_220331, 0861_SW047_220331	**31-Mar-2022**	**21-Apr-2022**	27-Sep-2022	✓	**21-Apr-2022**	27-Sep-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_MW030_220401, 0861_MW031_220401, 0861_MW034_220401, 0861_MW044_220401, 0861_SW051_220401, 0861_MW055D_220401, 0861_MW055S_220401, 0861_SW094_220401, 0861_SW036_220401, 0861_SW050_220401	**01-Apr-2022**	**21-Apr-2022**	28-Sep-2022	✓	**21-Apr-2022**	28-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW024_220404, 0861_MW036_220404, 0861_MW028_220404, 0861_MW029_220404	**04-Apr-2022**	**21-Apr-2022**	01-Oct-2022	✓	**21-Apr-2022**	01-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW035_220404	**04-Apr-2022**	**22-Apr-2022**	01-Oct-2022	✓	**22-Apr-2022**	01-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW033_220405	**05-Apr-2022**	**21-Apr-2022**	02-Oct-2022	✓	**21-Apr-2022**	02-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW008_220328, 0861_SW027_220328, 0861_SW011_220328, 0861_SW056_220328, 0861_SW076_220328, 0861_SW030_220328, 0861_SW002_220328, 0861_SW003_220328, 0861_SW059_220328, 0861_SW048_220328, 0861_SW041_220328	**28-Mar-2022**	**20-Apr-2022**	24-Sep-2022	✓	**21-Apr-2022**	24-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW028_220329, 0861_MW048_220329, 0861_SW004_220329, 0861_SW005_220329, 0861_SW009_220329, 0861_SW016_220329, 0861_SW015_220329, 0861_SW034_220329, 0861_SW018_220329, 0861_SW020_220329	**29-Mar-2022**	**20-Apr-2022**	25-Sep-2022	✓	**21-Apr-2022**	25-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW038_220330, 0861_SW037_220330, 0861_MW046_220330, 0861_MW037_220330, 0861_MW047_220330, 0861_MW050_220330, 0861_MW021_220330, 0861_MW022_220330, 0861_MW309_220330	**30-Mar-2022**	**20-Apr-2022**	26-Sep-2022	✓	**21-Apr-2022**	26-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW049_220331, 0861_SW021_220331, 0861_SW089_220331, 0861_SW090_220331, 0861_SW091_220331, 0861_SW052_220331, 0861_SW088_220331, 0861_MW002_220331, 0861_SW047_220331	**31-Mar-2022**	**21-Apr-2022**	27-Sep-2022	✓	**21-Apr-2022**	27-Sep-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0861_MW030_220401, 0861_MW031_220401, 0861_MW034_220401, 0861_MW044_220401, 0861_SW051_220401, 0861_MW055D_220401, 0861_MW055S_220401, 0861_SW094_220401, 0861_SW036_220401, 0861_SW050_220401	**01-Apr-2022**	**21-Apr-2022**	28-Sep-2022	✓	**21-Apr-2022**	28-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW024_220404, 0861_MW036_220404, 0861_MW028_220404, 0861_MW029_220404	**04-Apr-2022**	**21-Apr-2022**	01-Oct-2022	✓	**21-Apr-2022**	01-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW035_220404	**04-Apr-2022**	**22-Apr-2022**	01-Oct-2022	✓	**22-Apr-2022**	01-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW033_220405	**05-Apr-2022**	**21-Apr-2022**	02-Oct-2022	✓	**21-Apr-2022**	02-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW008_220328, 0861_SW027_220328, 0861_SW011_220328, 0861_SW056_220328, 0861_SW076_220328, 0861_SW030_220328, 0861_SW002_220328, 0861_SW003_220328, 0861_SW059_220328, 0861_SW048_220328, 0861_SW041_220328	**28-Mar-2022**	**20-Apr-2022**	24-Sep-2022	✓	**21-Apr-2022**	24-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW028_220329, 0861_MW048_220329, 0861_SW004_220329, 0861_SW005_220329, 0861_SW009_220329, 0861_SW016_220329, 0861_SW015_220329, 0861_SW034_220329, 0861_SW018_220329, 0861_SW020_220329	**29-Mar-2022**	**20-Apr-2022**	25-Sep-2022	✓	**21-Apr-2022**	25-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW038_220330, 0861_SW037_220330, 0861_MW046_220330, 0861_MW037_220330, 0861_MW047_220330, 0861_MW050_220330, 0861_MW021_220330, 0861_MW022_220330, 0861_MW309_220330	**30-Mar-2022**	**20-Apr-2022**	26-Sep-2022	✓	**21-Apr-2022**	26-Sep-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW049_220331, 0861_SW021_220331, 0861_SW089_220331, 0861_SW090_220331, 0861_SW091_220331, 0861_SW052_220331, 0861_SW088_220331, 0861_MW002_220331, 0861_SW047_220331	**31-Mar-2022**	**21-Apr-2022**	27-Sep-2022	✓	**21-Apr-2022**	27-Sep-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	6	58	**10.34**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	6	58	**10.34**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	58	**5.17**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	58	**5.17**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	58	**5.17**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	5	68	**7.35**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	5	68	**7.35**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	5	68	**7.35**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	68	**4.41**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2209950**	Page	: 1 of 39
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: BRISBANE	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 07-Apr-2022 14:00
Order number	: 60612563 3.1	Date Analysis Commenced	: 11-Apr-2022
C-O-C number	: ----	Issue Date	: 27-Apr-2022 10:18
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 90		
No. of samples analysed	: 90		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- **SPLIT WORK ORDER: It should be noted that ALS has split this work order over the following work orders EB2209950/ EB2209951 due to the size of the sample numbers. For any further information regarding this processing of samples please contact ALS client services division on ALSEnviro.Brisbane@alsglobal.com**
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X (PFAS): The LOR for particular samples have been raised due to matrix interference need dilution.
- EP231X PFAS: The LOR of particular analytes have been raised due to sample matrix interferences.
- EP231X PFAS: Particular samples required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- EP231X PFAS: Particular samples required dilution due to sample matrix. LOR values have been adjusted accordingly.
- EP231X PFAS: Whole bottle extraction was not possible for sample ‘0861_SW027_220328’ (EB2209950-004). Sample required dilution prior to extraction due to matrix interference (high level contaminants). LOR values have been adjusted accordingly.
- EP231X: PFAS: High LCS recovery deemed acceptable as all associated analyte results are less than LOR
- EP231X-(PFAS): Sample '0861_SD037_220330' (EB2209950-045) shows poor matrix spike recovery due to sample matrix interference. Confirmed by re-extraction and re-analysis.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD008_220328	0861_SD027_220328	0861_SD011_220328	0861_SD056_220328	0861_SD076_220328
				Sampling date / time	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-001	EB2209950-003	EB2209950-005	EB2209950-007	EB2209950-009
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**43.7**	**51.9**	**56.8**	**65.3**	**82.0**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	**0.0024**	<0.0002	**0.0028**	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	**0.0036**	<0.0002	**0.0029**	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	**0.0490**	<0.0002	**0.108**	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	**0.0043**	<0.0002	**0.0604**	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0004**	**0.142**	**0.0009**	**1.82**	**0.0020**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0022	<0.0002	**0.0038**	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.005	<0.001	<0.002	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	**0.0020**	<0.0002	**0.0036**	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	**0.0086**	<0.0002	**0.0080**	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	**0.0023**	<0.0004
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	**0.0035**	<0.0002	**0.0155**	**0.0005**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	**0.0027**	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	**0.0014**	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	**0.0021**	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0030	<0.0002	**0.0019**	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	**0.0006**	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0024	<0.0005	<0.0012	<0.0006
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	**0.0019**	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0024	<0.0005	<0.0012	<0.0006

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD008_220328	0861_SD027_220328	0861_SD011_220328	0861_SD056_220328	0861_SD076_220328
				Sampling date / time	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-001	EB2209950-003	EB2209950-005	EB2209950-007	EB2209950-009
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0024	<0.0005	<0.0012	<0.0006
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0024	<0.0005	<0.0012	<0.0006
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0024	<0.0005	<0.0012	<0.0006
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	<0.0005	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	<0.0005	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0010	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0010	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0010	<0.0005	**0.0006**	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0010	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0004**	**0.215**	**0.0009**	**2.04**	**0.0025**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0004**	**0.191**	**0.0009**	**1.93**	**0.0020**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0004**	**0.208**	**0.0009**	**1.96**	**0.0025**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**116**	**110**	**101**	**92.5**	**129**
13C8-PFOA	----	0.0002	%		**113**	**100**	**100**	**80.0**	**116**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_SD030_220328	0861_SD002_220328	0861_SD003_220328	0861_SD059_220328	0861_SD048_220328
			Sampling date / time	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00
Compound	CAS Number	LOR	Unit	EB2209950-011	EB2209950-013	EB2209950-015	EB2209950-017	EB2209950-019
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**64.3**	**47.7**	**28.8**	**51.5**	**32.6**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**0.0006**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0006	<0.0002	<0.0006	<0.0004	**0.0087**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**0.0018**
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	**0.0003**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD030_220328	0861_SD002_220328	0861_SD003_220328	0861_SD059_220328	0861_SD048_220328
				Sampling date / time	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-011	EB2209950-013	EB2209950-015	EB2209950-017	EB2209950-019
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	**0.0114**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	**0.0093**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	**0.0096**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**121**	**112**	**130**	**129**	**98.5**
13C8-PFOA	----	0.0002	%		**108**	**100**	**114**	**125**	**106**

Analytical Results

Sub-Matrix: **SOIL**
(Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SD041_220328	0861_SD028_220329	0861_SD004_220329	0861_SD005_220329	0861_SD009_220329
				Sampling date / time	28-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00
					EB2209950-021	EB2209950-024	EB2209950-027	EB2209950-029	EB2209950-031
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**61.0**	**64.5**	**32.2**	**43.0**	**50.5**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	**0.0007**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	**0.0006**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	**0.0016**	<0.0002	**0.0002**	**0.0046**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	**0.0005**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0010**	**0.0271**	**0.0013**	**0.0023**	**0.0556**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0005	<0.0062	**0.0005**	**0.0011**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.002	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	<0.0004
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	**0.0009**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	**0.0002**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		**0.0002**	<0.0005	<0.0002	<0.0002	**0.0005**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0012	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0012	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD041_220328	0861_SD028_220329	0861_SD004_220329	0861_SD005_220329	0861_SD009_220329
				Sampling date / time	28-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-021	EB2209950-024	EB2209950-027	EB2209950-029	EB2209950-031
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0012	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0012	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0012	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0012**	**0.0287**	**0.0013**	**0.0030**	**0.0647**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0010**	**0.0287**	**0.0013**	**0.0025**	**0.0602**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0012**	**0.0287**	**0.0013**	**0.0025**	**0.0625**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**120**	**125**	**106**	**105**	**110**
13C8-PFOA	----	0.0002	%		**120**	**97.5**	**116**	**107**	**116**

Analytical Results

Sub-Matrix: **SOIL**
(Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SD016_220329	0861_SD015_220329	0861_SD034_220329	0861_SD018_220329	0861_SD020_220329
				Sampling date / time	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00
					EB2209950-033	EB2209950-035	EB2209950-037	EB2209950-039	EB2209950-041
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**42.0**	**58.5**	**31.2**	**49.1**	**47.0**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		**0.0005**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		**0.0006**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0060**	**0.0004**	**0.0003**	**0.0032**	**0.0003**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0005	<0.0002	<0.0002	**0.0003**	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0054**	**0.0036**	**0.0039**	**0.0248**	**0.0034**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0018	<0.0020	**0.0010**	<0.0002	**0.0009**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.002	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		**0.0008**	**0.0002**	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0023**	**0.0003**	**0.0002**	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		**0.0006**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		**0.0008**	**0.0003**	**0.0003**	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0005	<0.0002	**0.0002**	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0012	<0.0005	<0.0006	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0005	<0.0004	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0012	<0.0005	<0.0006	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD016_220329	0861_SD015_220329	0861_SD034_220329	0861_SD018_220329	0861_SD020_220329
				Sampling date / time	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-033	EB2209950-035	EB2209950-037	EB2209950-039	EB2209950-041
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0012	<0.0005	<0.0006	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0012	<0.0005	<0.0006	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0012	<0.0005	<0.0006	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0005	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0020	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0170**	**0.0048**	**0.0059**	**0.0283**	**0.0046**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0114**	**0.0040**	**0.0042**	**0.0280**	**0.0037**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0164**	**0.0048**	**0.0047**	**0.0280**	**0.0037**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**115**	**107**	**122**	**127**	**107**
13C8-PFOA	----	0.0002	%		**90.0**	**111**	**97.5**	**128**	**110**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD038_220330	0861_SD037_220330	0861_SD049_220331	0861_SD021_220331	0861_SD089_220331
				Sampling date / time	30-Mar-2022 00:00	30-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-043	EB2209950-045	EB2209950-053	EB2209950-055	EB2209950-057
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**34.6**	**55.4**	**15.9**	**39.7**	**33.2**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	**0.0013**	<0.0002	<0.0244	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	<0.0244	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	**0.0139**	<0.0002	<0.0244	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	**0.0010**	<0.0002	<0.0244	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	**0.135**	**0.0002**	**0.130**	**0.0002**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	<0.0244	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.005	<0.001	<0.122	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	**0.0012**	<0.0002	<0.0244	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	**0.0036**	<0.0002	<0.0244	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	<0.0244	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	**0.0016**	<0.0002	<0.0244	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	<0.0244	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	<0.0244	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	<0.0244	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	<0.0244	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	<0.0244	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0025	<0.0005	<0.0611	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	<0.0244	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0025	<0.0005	<0.0611	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD038_220330	0861_SD037_220330	0861_SD049_220331	0861_SD021_220331	0861_SD089_220331
				Sampling date / time	30-Mar-2022 00:00	30-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-043	EB2209950-045	EB2209950-053	EB2209950-055	EB2209950-057
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0025	<0.0005	<0.0611	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0025	<0.0005	<0.0611	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0025	<0.0005	<0.0611	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	<0.0244	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0010	<0.0002	<0.0244	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0010	<0.0005	<0.0244	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0010	<0.0005	<0.0244	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0010	<0.0005	<0.0244	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0010	<0.0005	<0.0244	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	**0.158**	**0.0002**	**0.130**	**0.0002**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	**0.149**	**0.0002**	**0.130**	**0.0002**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	**0.157**	**0.0002**	**0.130**	**0.0002**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**100**	**95.0**	**98.0**	**Not Determined**	**84.0**
13C8-PFOA	----	0.0002	%		**114**	**95.0**	**102**	**Not Determined**	**105**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD090_220331	0861_SD091_220331	0861_SD052_220331	0861_SD088_220331	0861_SD047_220331
				Sampling date / time	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-058	EB2209950-059	EB2209950-064	EB2209950-065	EB2209950-069
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**52.9**	**29.4**	**44.8**	**28.7**	**44.0**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0010	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0010	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0010	<0.0002	<0.0002	<0.0002	**0.0005**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0010	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0010	<0.0002	**0.0005**	<0.0002	**0.0070**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0010	<0.0002	<0.0002	<0.0002	**0.0030**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.005	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0010	<0.0002	<0.0002	<0.0002	**0.0002**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0010	<0.0002	<0.0002	<0.0002	**0.0003**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0010	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0010	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0010	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0010	<0.0002	**0.0002**	<0.0002	**0.0002**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0010	<0.0002	**0.0002**	<0.0002	**0.0002**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0010	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0010	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0025	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0010	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0025	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD090_220331	0861_SD091_220331	0861_SD052_220331	0861_SD088_220331	0861_SD047_220331
				Sampling date / time	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-058	EB2209950-059	EB2209950-064	EB2209950-065	EB2209950-069
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0025	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0025	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0025	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0010	<0.0002	**0.0004**	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0010	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0010	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0010	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0010	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0012	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0010	<0.0002	**0.0013**	<0.0002	**0.0114**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0010	<0.0002	**0.0005**	<0.0002	**0.0075**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0010	<0.0002	**0.0005**	<0.0002	**0.0080**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**115**	**126**	**116**	**88.5**	**114**
13C8-PFOA	----	0.0002	%		**90.0**	**108**	**126**	**108**	**97.5**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD051_220401	0861_SD094_220401	0861_SD050_220401	0861_SD033_220405	0861_SD036_220401
				Sampling date / time	01-Apr-2022 00:00	01-Apr-2022 00:00	01-Apr-2022 00:00	05-Apr-2022 00:00	01-Apr-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-075	EB2209950-078	EB2209950-082	EB2209950-089	EB2209950-091
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**31.0**	**29.3**	**56.2**	**42.0**	**28.4**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0012**	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0021**	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	**0.0003**	<0.0002	**0.0174**	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0012**	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0004**	**0.0082**	**0.0017**	**0.176**	<0.0005
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0189**	<0.0008
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	**0.0008**	<0.0002	**0.0013**	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	**0.0005**	<0.0002	**0.0050**	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	**0.0003**	<0.0002	**0.0008**	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	**0.0003**	<0.0002	**0.0030**	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	**0.0002**	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	**0.0002**	**0.0003**	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	**0.0004**	**0.0005**	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0006**	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0003**	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0038**	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD051_220401	0861_SD094_220401	0861_SD050_220401	0861_SD033_220405	0861_SD036_220401
				Sampling date / time	01-Apr-2022 00:00	01-Apr-2022 00:00	01-Apr-2022 00:00	05-Apr-2022 00:00	01-Apr-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-075	EB2209950-078	EB2209950-082	EB2209950-089	EB2209950-091
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	**0.0002**	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0018	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0004**	**0.0110**	**0.0024**	**0.232**	<0.0002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0004**	**0.0085**	**0.0017**	**0.193**	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0004**	**0.0104**	**0.0017**	**0.205**	<0.0002
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**106**	**100**	**127**	**104**	**124**
13C8-PFOA	----	0.0002	%		**105**	**102**	**100**	**108**	**115**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW008_220328	0861_SW027_220328	0861_SW011_220328	0861_SW056_220328	0861_SW076_220328
				Sampling date / time	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00
					EB2209950-002	EB2209950-004	EB2209950-006	EB2209950-008	EB2209950-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.03**	**1.87**	**0.13**	**0.66**	**0.83**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**2.32**	**0.12**	**0.58**	**0.75**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.12**	**21.5**	**0.99**	**2.99**	**3.72**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**1.11**	**0.06**	**0.15**	**0.19**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.22**	**14.0**	**1.49**	**2.82**	**3.64**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**0.4**	<0.1	**0.2**	**0.3**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.95**	**0.29**	**0.64**	**0.96**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.04**	**4.98**	**0.39**	**1.40**	**1.78**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.48**	**0.12**	**0.29**	**0.41**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.02**	**1.22**	**0.13**	**0.43**	**0.60**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	**0.02**	**0.04**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.06	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.06	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.06	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW008_220328	0861_SW027_220328	0861_SW011_220328	0861_SW056_220328	0861_SW076_220328
				Sampling date / time	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00
					EB2209950-002	EB2209950-004	EB2209950-006	EB2209950-008	EB2209950-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.06	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.06	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	**1.06**	**0.16**	**0.28**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.43**	**48.8**	**4.78**	**10.3**	**13.5**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.34**	**35.5**	**2.48**	**5.81**	**7.36**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.43**	**45.4**	**4.60**	**9.59**	**12.5**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**126**	**126**	**115**	**114**	**117**
13C8-PFOA	----	0.02	%		**112**	**112**	**113**	**106**	**105**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW030_220328	0861_SW002_220328	0861_SW003_220328	0861_SW059_220328	0861_SW048_220328
				Sampling date / time	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00
					EB2209950-012	EB2209950-014	EB2209950-016	EB2209950-018	EB2209950-020
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.18**	**0.10**	**0.86**	**0.13**	**0.03**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.14**	**0.08**	**0.76**	**0.11**	**0.02**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.00**	**0.61**	**3.75**	**0.66**	**0.12**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.06**	**0.03**	**0.17**	**0.03**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**2.29**	**1.02**	**3.20**	**0.92**	**0.38**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**0.2**	**0.3**	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.12**	**0.34**	**1.03**	**0.15**	**0.02**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.29**	**0.38**	**1.89**	**0.23**	**0.14**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.06**	**0.16**	**0.42**	**0.06**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.09**	**0.19**	**0.58**	**0.07**	**0.02**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	**0.05**	**0.03**	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW030_220328	0861_SW002_220328	0861_SW003_220328	0861_SW059_220328	0861_SW048_220328
				Sampling date / time	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00	28-Mar-2022 00:00
					EB2209950-012	EB2209950-014	EB2209950-016	EB2209950-018	EB2209950-020
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.14**	**0.08**	**0.18**	<0.05	**0.06**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**4.37**	**3.24**	**13.2**	**2.36**	**0.79**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**3.29**	**1.63**	**6.95**	**1.58**	**0.50**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**4.17**	**3.08**	**12.2**	**2.22**	**0.77**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**130**	**124**	**134**	**131**	**121**
13C8-PFOA	----	0.02	%		**111**	**113**	**112**	**113**	**116**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW041_220328	0861_SW028_220329	0861_MW048_220329	0861_SW004_220329	0861_SW005_220329
				Sampling date / time	28-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00
					EB2209950-022	EB2209950-023	EB2209950-025	EB2209950-026	EB2209950-028
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.98**	<0.02	**0.37**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.08**	<0.02	**0.33**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**7.45**	**0.04**	**2.19**	**0.04**	**0.02**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.51**	<0.02	**0.13**	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**8.46**	**0.08**	**2.96**	**0.10**	**0.10**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.2**	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.38**	<0.02	**0.12**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.49**	<0.02	**0.44**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.24**	<0.02	**0.06**	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.50**	<0.01	**0.13**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW041_220328	0861_SW028_220329	0861_MW048_220329	0861_SW004_220329	0861_SW005_220329
				Sampling date / time	28-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00
					EB2209950-022	EB2209950-023	EB2209950-025	EB2209950-026	EB2209950-028
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.08**	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**21.4**	**0.12**	**6.73**	**0.14**	**0.12**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**15.9**	**0.12**	**5.15**	**0.14**	**0.12**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**19.8**	**0.12**	**6.27**	**0.14**	**0.12**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**127**	**118**	**117**	**118**	**116**
13C8-PFOA	----	0.02	%		**123**	**106**	**108**	**111**	**104**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW009_220329	0861_SW016_220329	0861_SW015_220329	0861_SW034_220329	0861_SW018_220329
				Sampling date / time	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00
					EB2209950-030	EB2209950-032	EB2209950-034	EB2209950-036	EB2209950-038
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.14**	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.10**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.75**	**0.02**	**0.02**	**0.05**	**0.05**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.03**	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.05**	**0.05**	**0.07**	**0.08**	**0.07**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.12**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.24**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.05**	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.08**	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW009_220329	0861_SW016_220329	0861_SW015_220329	0861_SW034_220329	0861_SW018_220329
				Sampling date / time	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-030	EB2209950-032	EB2209950-034	EB2209950-036	EB2209950-038
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**2.56**	**0.07**	**0.09**	**0.13**	**0.12**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.80**	**0.07**	**0.09**	**0.13**	**0.12**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**2.43**	**0.07**	**0.09**	**0.13**	**0.12**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**98.9**	**118**	**109**	**110**
13C8-PFOA	----	0.02	%		**104**	**108**	**107**	**111**	**103**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW020_220329	0861_SW038_220330	0861_SW037_220330	0861_MW046_220330	0861_MW037_220330
				Sampling date / time	29-Mar-2022 00:00	30-Mar-2022 00:00	30-Mar-2022 00:00	30-Mar-2022 00:00	30-Mar-2022 00:00
					EB2209950-040	EB2209950-042	EB2209950-044	EB2209950-046	EB2209950-047
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.28**	**12.3**	**0.55**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**0.23**	**11.8**	**0.40**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.04**	<0.01	**1.53**	**85.0**	**1.75**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**0.08**	**7.15**	**0.07**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.07**	<0.01	**1.49**	**179**	**2.51**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.25	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	**13.0**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**0.18**	**28.0**	**0.08**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**0.38**	**45.4**	**0.42**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	**0.07**	**9.28**	**0.05**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.10**	**22.1**	**0.08**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	**0.42**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.25	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.25	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.25	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.25	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.62	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.25	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.62	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.62	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW020_220329	0861_SW038_220330	0861_SW037_220330	0861_MW046_220330	0861_MW037_220330
				Sampling date / time	29-Mar-2022 00:00	30-Mar-2022 00:00	30-Mar-2022 00:00	30-Mar-2022 00:00	30-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-040	EB2209950-042	EB2209950-044	EB2209950-046	EB2209950-047
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.62	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.62	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.25	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.25	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.25	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	**34.5**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	**1.60**	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.25	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.11**	<0.01	**4.34**	**450**	**5.91**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.11**	<0.01	**3.02**	**264**	**4.26**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.11**	<0.01	**4.03**	**430**	**5.44**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**103**	**116**	**96.5**	**110**	**106**
13C8-PFOA	----	0.02	%		**101**	**98.1**	**105**	**108**	**95.0**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW047_220330	0861_MW050_220330	0861_MW021_220330	0861_MW022_220330	0861_MW309_220330
				Sampling date / time	30-Mar-2022 00:00	30-Mar-2022 00:00	30-Mar-2022 00:00	30-Mar-2022 00:00	30-Mar-2022 00:00
					EB2209950-048	EB2209950-049	EB2209950-050	EB2209950-051	EB2209950-052
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.86**	<0.02	**1.60**	**0.61**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.64**	<0.02	**2.32**	**0.61**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**4.01**	**0.01**	**24.9**	**3.95**	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.16**	<0.02	**1.08**	**0.05**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**2.84**	**0.07**	**35.0**	**0.29**	<0.02
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.3**	<0.1	<0.4	**0.2**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.40**	<0.02	**0.69**	**0.13**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.03**	<0.02	**3.12**	**0.57**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.10**	<0.02	**0.74**	**0.07**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.17**	<0.01	**2.43**	**0.14**	<0.02
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.06
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.06
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.06

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW047_220330	0861_MW050_220330	0861_MW021_220330	0861_MW022_220330	0861_MW309_220330
				Sampling date / time	30-Mar-2022 00:00	30-Mar-2022 00:00	30-Mar-2022 00:00	30-Mar-2022 00:00	30-Mar-2022 00:00
					EB2209950-048	EB2209950-049	EB2209950-050	EB2209950-051	EB2209950-052
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.06
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.12	<0.05	<0.06
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.06**	<0.05	<0.25	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**10.6**	**0.08**	**71.9**	**6.62**	<0.02
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**6.85**	**0.08**	**59.9**	**4.24**	<0.02
Sum of PFAS (WA DER List)	----	0.01	µg/L		**9.77**	**0.08**	**68.5**	**5.96**	<0.02
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**108**	**112**	**114**	**104**	**117**
13C8-PFOA	----	0.02	%		**101**	**106**	**106**	**107**	**103**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW049_220331	0861_SW021_220331	0861_SW089_220331	0861_SW090_220331	0861_SW091_220331
				Sampling date / time	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00
					EB2209950-054	EB2209950-056	EB2209950-060	EB2209950-061	EB2209950-062
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.03**	**1.35**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.02**	**1.35**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.17**	**8.60**	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.37**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.64**	**13.3**	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.05	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**0.7**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.02**	**1.74**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.06**	**4.58**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.74**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.03**	**1.60**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	**0.05**	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.06	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	**0.03**	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.06	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.06	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW049_220331	0861_SW021_220331	0861_SW089_220331	0861_SW090_220331	0861_SW091_220331
				Sampling date / time	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-054	EB2209950-056	EB2209950-060	EB2209950-061	EB2209950-062
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.06	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.06	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.97**	**34.4**	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.81**	**21.9**	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.95**	**32.6**	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**122**	**115**	**117**	**124**	**107**
13C8-PFOA	----	0.02	%		**105**	**111**	**109**	**106**	**108**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW052_220331	0861_SW088_220331	0861_MW002_220331	0861_SW047_220331	0861_MW030_220401
				Sampling date / time	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	01-Apr-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-063	EB2209950-066	EB2209950-067	EB2209950-068	EB2209950-070
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**2.97**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**2.20**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**5.31**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.07
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.01**	**0.12**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	**0.7**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**1.14**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**6.31**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.88**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.57**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.06
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.06
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.06

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW052_220331	0861_SW088_220331	0861_MW002_220331	0861_SW047_220331	0861_MW030_220401
				Sampling date / time	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	31-Mar-2022 00:00	01-Apr-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-063	EB2209950-066	EB2209950-067	EB2209950-068	EB2209950-070
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.06
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.06
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	**0.01**	**20.2**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.01**	**5.43**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	**0.01**	**18.0**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**114**	**120**	**105**	**122**	**115**
13C8-PFOA	----	0.02	%		**110**	**111**	**96.3**	**102**	**108**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW031_220401	0861_MW034_220401	0861_MW044_220401	0861_SW051_220401	0861_MW055D_220401
				Sampling date / time	01-Apr-2022 00:00	01-Apr-2022 00:00	01-Apr-2022 00:00	01-Apr-2022 00:00	01-Apr-2022 00:00
					EB2209950-071	EB2209950-072	EB2209950-073	EB2209950-074	EB2209950-076
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	**0.01**	<0.01	**0.02**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**0.01**	<0.03	**0.02**	**0.02**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW031_220401	0861_MW034_220401	0861_MW044_220401	0861_SW051_220401	0861_MW055D_220401
				Sampling date / time	01-Apr-2022 00:00	01-Apr-2022 00:00	01-Apr-2022 00:00	01-Apr-2022 00:00	01-Apr-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-071	EB2209950-072	EB2209950-073	EB2209950-074	EB2209950-076
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**0.01**	**0.01**	**0.02**	**0.04**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.01**	**0.01**	**0.02**	**0.04**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.01**	**0.01**	**0.02**	**0.04**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**110**	**109**	**109**	**107**	**114**
13C8-PFOA	----	0.02	%		**106**	**109**	**104**	**117**	**108**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW055S_220401	0861_SW094_220401	0861_SW036_220401	0861_SW050_220401	0861_MW035_220404
				Sampling date / time	01-Apr-2022 00:00	01-Apr-2022 00:00	01-Apr-2022 00:00	01-Apr-2022 00:00	04-Apr-2022 00:00
					EB2209950-077	EB2209950-079	EB2209950-081	EB2209950-083	EB2209950-084
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.06**	**0.19**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.07**	**0.18**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.40**	**1.03**	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.02**	**0.05**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.32**	**1.24**	<0.01	**0.01**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.23**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.06**	**0.40**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.10**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.03**	**0.12**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW055S_220401	0861_SW094_220401	0861_SW036_220401	0861_SW050_220401	0861_MW035_220404
				Sampling date / time	01-Apr-2022 00:00	01-Apr-2022 00:00	01-Apr-2022 00:00	01-Apr-2022 00:00	04-Apr-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209950-077	EB2209950-079	EB2209950-081	EB2209950-083	EB2209950-084
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.96**	**3.54**	<0.01	**0.01**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.72**	**2.27**	<0.01	**0.01**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.87**	**3.31**	<0.01	**0.01**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**115**	**98.6**	**104**	**106**	**102**
13C8-PFOA	----	0.02	%		**110**	**107**	**106**	**111**	**93.1**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW024_220404	0861_MW036_220404	0861_MW028_220404	0861_MW029_220404	0861_SW033_220405
				Sampling date / time	04-Apr-2022 00:00	04-Apr-2022 00:00	04-Apr-2022 00:00	04-Apr-2022 00:00	05-Apr-2022 00:00
					EB2209950-085	EB2209950-086	EB2209950-087	EB2209950-088	EB2209950-090
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.22**	**0.83**	**3.38**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**0.21**	**1.02**	**4.96**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	**0.04**	**1.50**	**5.11**	**28.6**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**0.20**	**0.50**	**0.87**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	**3.37**	**6.04**	**31.4**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.67**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.2	<1.7
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**0.07**	**0.20**	**3.17**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**0.31**	**0.92**	**12.5**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	**0.05**	**0.17**	**1.88**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.13**	**0.32**	**4.52**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.08**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.12
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.24**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.12
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.12

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW024_220404	0861_MW036_220404	0861_MW028_220404	0861_MW029_220404	0861_SW033_220405
				Sampling date / time	04-Apr-2022 00:00	04-Apr-2022 00:00	04-Apr-2022 00:00	04-Apr-2022 00:00	05-Apr-2022 00:00
					EB2209950-085	EB2209950-086	EB2209950-087	EB2209950-088	EB2209950-090
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.12
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.12
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**0.04**	**6.06**	**15.1**	**92.3**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.04**	**4.87**	**11.2**	**60.0**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.04**	**5.65**	**13.6**	**85.4**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.4**	**108**	**85.1**	**117**	**93.7**
13C8-PFOA	----	0.02	%		**108**	**103**	**91.4**	**110**	**106**

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2209951**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: ----	Telephone	: [redacted]
Facsimile	: ----	Facsimile	: [redacted]
Project	: QLD_0861_PFASOMP	Page	: 1 of 3
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 07-Apr-2022 14:00	Issue Date	: 09-Apr-2022
Client Requested Due Date	: 22-Apr-2022	Scheduled Reporting Date	: **22-Apr-2022**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 4	Temperature	: 7.3°c, 9.7°c, 8.0°c, 7.8°c - Ice present
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 27 / 27

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **SPLIT WORK ORDER: It should be noted that ALS has split this work order over the following work order EB2209950/ EB2209951 due to the size of the sample numbers. For any further information regarding this processing of samples please contact ALS client services division on ALSEnviro.Brisbane@alsglobal.com**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2209951-005	06-Apr-2022 00:00	0861_SD064_220406	✓	✓
EB2209951-006	06-Apr-2022 00:00	0861_SD067_220406	✓	✓
EB2209951-008	06-Apr-2022 00:00	0861_SD079_220406	✓	✓
EB2209951-010	06-Apr-2022 00:00	0861_SD080_220406	✓	✓
EB2209951-012	06-Apr-2022 00:00	0861_SD053_220406	✓	✓
EB2209951-025	29-Mar-2022 00:00	0861_SD099_220329	✓	✓
EB2209951-027	29-Mar-2022 00:00	0861_SD100_220329	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2209951-001	05-Apr-2022 00:00	0861_MW042_220405	✓
EB2209951-002	05-Apr-2022 00:00	0861_MW043_220405	✓
EB2209951-003	05-Apr-2022 00:00	0861_MW041_220405	✓
EB2209951-004	06-Apr-2022 00:00	0861_SW064_220406	✓
EB2209951-007	06-Apr-2022 00:00	0861_SW079_220406	✓
EB2209951-009	06-Apr-2022 00:00	0861_SW080_220406	✓
EB2209951-011	06-Apr-2022 00:00	0861_SW053_220406	✓
EB2209951-013	06-Apr-2022 00:00	0861_MW020_220406	✓
EB2209951-014	06-Apr-2022 00:00	0861_MW012_220406	✓
EB2209951-015	06-Apr-2022 00:00	0861_MW026_220406	✓
EB2209951-016	06-Apr-2022 00:00	0861_MW033_220406	✓
EB2209951-017	06-Apr-2022 00:00	0861_MW007_220406	✓
EB2209951-018	06-Apr-2022 00:00	0861_MW025_220406	✓
EB2209951-019	06-Apr-2022 00:00	0861_MW032_220406	✓
EB2209951-020	06-Apr-2022 00:00	0861_MW005_220406	✓
EB2209951-021	07-Apr-2022 00:00	0861_MW006_220407	✓

			WATER - EP231X PFAS - Full Suite (28 analytes)
EB2209951-022	07-Apr-2022 00:00	0861_MW023_220407	✓
EB2209951-023	07-Apr-2022 00:00	0861_MW049_220407	✓
EB2209951-024	29-Mar-2022 00:00	0861_SW099_220329	✓
EB2209951-026	29-Mar-2022 00:00	0861_SW100_220329	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV) — Email — [redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT) — Email — derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

[redacted]

- *AU Certificate of Analysis - NATA (COA) — Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI) — Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC) — Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN) — Email
- Chain of Custody (CoC) (COC) — Email
- EDI Format - ESDAT (ESDAT) — Email

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2209951**	Page	: 1 of 16
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 07-Apr-2022
Order number	: 60612563 3.1	Date Analysis Commenced	: 11-Apr-2022
C-O-C number	: ----	Issue Date	: 27-Apr-2022
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 27		
No. of samples analysed	: 27		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4279446)									
EB2209950-043	Anonymous	EA055: Moisture Content	----	0.1	%	34.6	35.6	2.6	0% - 20%
EB2209950-075	Anonymous	EA055: Moisture Content	----	0.1	%	31.0	31.1	0.3	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4279451)									
EB2209942-001	Anonymous	EA055: Moisture Content	----	0.1	%	41.0	44.2	7.3	0% - 20%
EB2209946-009	Anonymous	EA055: Moisture Content	----	0.1	%	36.6	36.7	0.4	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4279445)									
EB2209950-043	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2209950-075	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0004	0.0005	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4279450)									
EB2209942-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0010	0.0012	18.6	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4279450) - continued									
EB2209942-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0125	0.0148	16.7	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2209946-009	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0026	0.0028	6.6	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4279445)									
EB2209950-043	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2209950-075	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4279450)									
EB2209942-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0005	0.0005	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0003	<0.0003	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0005	0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4279450) - continued									
EB2209942-001	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2209946-009	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4279445)									
EB2209950-043	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2209950-075	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4279450)									
EB2209942-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2209946-009	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4279445)									
EB2209950-043	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2209950-075	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4279445) - continued									
EB2209950-075	Anonymous	EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4279450)									
EB2209942-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2209946-009	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4281165)									
EB2209951-013	0861_MW020_220406	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	13.8	14.3	4.2	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	72.1	70.4	2.4	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	1.42	1.37	3.2	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	1.57	1.68	6.7	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	1.55	1.66	6.8	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.05	<0.05	0.0	No Limit
EB2209951-021	0861_MW006_220407	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	10.5	10.3	2.6	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	42.0	45.8	8.5	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	1.82	1.86	1.9	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	1.83	1.74	5.3	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.45	0.47	4.9	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.05	<0.05	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4281165)									
EB2209951-013	0861_MW020_220406	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	2.60	2.33	10.9	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	2.71	2.65	2.2	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	4.22	3.94	6.8	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	1.19	1.14	4.3	0% - 20%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	0.51	0.52	0.0	0% - 50%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4281165) - continued									
EB2209951-013	0861_MW020_220406	EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	0.11	0.10	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.9	<0.8	0.0	No Limit
EB2209951-021	0861_MW006_220407	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	1.03	1.05	1.9	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	2.11	2.00	5.6	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	3.79	3.92	3.3	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.75	0.66	13.3	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.05	0.05	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.8	0.8	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4281165)									
EB2209951-013	0861_MW020_220406	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.12	<0.12	0.0	No Limit
EB2209951-021	0861_MW006_220407	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	0.28	0.24	17.6	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.12	<0.12	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4281165) - continued									
EB2209951-021	0861_MW006_220407	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.12	<0.12	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.12	<0.12	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4281165)									
EB2209951-013	0861_MW020_220406	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.71	0.75	6.1	0% - 50%
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2209951-021	0861_MW006_220407	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.39	0.46	17.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4281165)									
EB2209951-013	0861_MW020_220406	EP231X: Sum of PFAS	----	0.01	µg/L	102	101	1.6	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	85.9	84.7	1.4	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	98.8	96.9	1.9	0% - 20%
EB2209951-021	0861_MW006_220407	EP231X: Sum of PFAS	----	0.01	µg/L	65.8	69.4	5.3	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	52.5	56.1	6.6	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	63.2	66.8	5.6	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4279445)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	85.4	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	87.2	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	85.2	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	84.9	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	95.7	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	72.1	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4279450)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	124	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	# 148	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	112	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	# 138	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	122	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	119	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4279445)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	78.8	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	74.8	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	78.0	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	82.4	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.4	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.4	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	78.0	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	73.2	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	74.0	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	74.0	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	79.5	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4279450)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	# 145	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	113	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	127	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	126	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	131	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	113	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	121	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	122	64.0	136

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4279450) - continued								
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	132	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	130	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	# 141	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4279445)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	90.5	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	83.5	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	71.6	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	74.7	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	82.0	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	71.2	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4279450)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	130	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	104	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	# 140	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	# 143	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	140	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	128	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4279445)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	70.5	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	97.9	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	74.6	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	100	54.8	124
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4279450)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	132	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	135	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	100	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	# 170	54.8	124

Sub-Matrix: **WATER**

Method Blank (MB) Report	Laboratory Control Spike (LCS) Report: Spike	Spike Recovery (%)	Acceptable Limits (%)

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4281160)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	127	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	127	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	115	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	129	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	126	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	142	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4281165)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	# 140	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	# 139	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	128	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	134	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	139	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	141	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281160)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	127	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	126	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	121	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	126	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	132	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	124	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	126	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	124	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	124	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	124	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281165)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	124	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	125	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	118	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	# 134	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	127	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	122	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	124	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	119	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	131	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	123	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	# 140	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281160)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281160) - continued								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	124	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	130	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	122	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	115	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	116	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	134	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	123	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281165)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	134	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	122	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	128	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	124	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	118	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	# 137	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	# 138	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4281160)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	134	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	129	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	132	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	124	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4281165)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	135	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	118	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	129	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	130	64.2	133
EP231P: PFAS Sums (QCLot: 4281160)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 4281165)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231P: PFAS Sums (QCLot: 4281165) - continued								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4279445)							
EB2209950-045	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	# Not Determined	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	# Not Determined	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	# Not Determined	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	# 1.5	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4279450)							
EB2209942-004	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	126	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	122	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	129	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	125	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	109	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	125	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4279445)							
EB2209950-045	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	# 1.2	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	# Not Determined	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	# Not Determined	71.0	131

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4279445) - continued							
EB2209950-045	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	# Not Determined	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	# 1.0	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	# Not Determined	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	# 16.9	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	# Not Determined	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	# 18.2	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	# 26.1	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4279450)							
EB2209942-004	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	134	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	129	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	122	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	117	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	118	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	123	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	107	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	120	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	109	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	112	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	121	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4279445)							
EB2209950-045	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	# 2.6	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	# 5.1	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	# 21.1	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	# 4.3	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	# 30.2	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	# 13.3	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	# 4.0	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4279450)							
EB2209942-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	106	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	114	70.0	130

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4279450) - continued							
EB2209942-004	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	84.3	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	128	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	124	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	120	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	126	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4279445)							
EB2209950-045	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	# 27.3	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	# 24.4	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	# 13.9	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	# Not Determined	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4279450)							
EB2209942-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	144	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	139	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	116	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	114	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4281165)							
EB2209951-013	0861_MW020_220406	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	123	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	116	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	# Not Determined	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	118	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	# Not Determined	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	131	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281165)							
EB2209951-013	0861_MW020_220406	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	109	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	110	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	101	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	119	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	97.2	71.0	133

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4281165) - continued							
EB2209951-013	0861_MW020_220406	EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	111	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	115	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	112	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	112	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	104	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	122	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4281165)							
EB2209951-013	0861_MW020_220406	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	122	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	116	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	106	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	119	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	100	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	126	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	123	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4281165)							
EB2209951-013	0861_MW020_220406	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	121	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	128	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	118	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	106	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2209951**	Page	: 1 of 10
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 07-Apr-2022
Site	: ----	Issue Date	: 27-Apr-2022
Sampler	: ----	No. of samples received	: 27
Order number	: 60612563 3.1	No. of samples analysed	: 27

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	QC-4279450-002	----	**Perfluoropentane sulfonic acid (PFPeS)**	2706-91-4	148 %	73.0-123%	**Recovery greater than upper control limit**
EP231A: Perfluoroalkyl Sulfonic Acids	QC-4279450-002	----	**Perfluoroheptane sulfonic acid (PFHpS)**	375-92-8	138 %	70.0-132%	**Recovery greater than upper control limit**
EP231B: Perfluoroalkyl Carboxylic Acids	QC-4279450-002	----	**Perfluorobutanoic acid (PFBA)**	375-22-4	145 %	71.0-135%	**Recovery greater than upper control limit**
EP231B: Perfluoroalkyl Carboxylic Acids	QC-4279450-002	----	**Perfluorotetradecanoic acid (PFTeDA)**	376-06-7	141 %	69.0-133%	**Recovery greater than upper control limit**
EP231C: Perfluoroalkyl Sulfonamides	QC-4279450-002	----	**N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)**	24448-09-7	140 %	61.5-139%	**Recovery greater than upper control limit**
EP231C: Perfluoroalkyl Sulfonamides	QC-4279450-002	----	**N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)**	1691-99-2	143 %	61.9-137%	**Recovery greater than upper control limit**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	QC-4279450-002	----	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	170 %	54.8-124%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2209950--045	Anonymous	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2209950--045	Anonymous	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2209950--045	Anonymous	**Perfluorodecane sulfonic acid (PFDS)**	335-77-3	1.5 %	59.0-134%	**Recovery less than lower data quality objective**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2209950--045	Anonymous	**Perfluorobutanoic acid (PFBA)**	375-22-4	1.2 %	71.0-135%	**Recovery less than lower data quality objective**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2209950--045	Anonymous	**Perfluorononanoic acid (PFNA)**	375-95-1	1.0 %	72.0-129%	**Recovery less than lower data quality objective**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2209950--045	Anonymous	**Perfluoroundecanoic acid (PFUnDA)**	2058-94-8	16.9 %	64.0-136%	**Recovery less than lower data quality objective**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2209950--045	Anonymous	**Perfluorotridecanoic acid (PFTrDA)**	72629-94-8	18.2 %	66.0-139%	**Recovery less than lower data quality objective**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2209950--045	Anonymous	**Perfluorotetradecanoic acid (PFTeDA)**	376-06-7	26.1 %	69.0-133%	**Recovery less than lower data quality objective**

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries - Continued							
EP231C: Perfluoroalkyl Sulfonamides	EB2209950--045	Anonymous	**Perfluorooctane sulfonamide (FOSA)**	754-91-6	2.6 %	48.0-128%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2209950--045	Anonymous	**N-Methyl perfluorooctane sulfonamide (MeFOSA)**	31506-32-8	5.1 %	70.0-130%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2209950--045	Anonymous	**N-Ethyl perfluorooctane sulfonamide (EtFOSA)**	4151-50-2	21.1 %	70.0-130%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2209950--045	Anonymous	**N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)**	24448-09-7	4.3 %	70.0-130%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2209950--045	Anonymous	**N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)**	1691-99-2	30.2 %	70.0-130%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2209950--045	Anonymous	**N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)**	2355-31-9	13.3 %	63.0-144%	**Recovery less than lower data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2209950--045	Anonymous	**N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)**	2991-50-6	4.0 %	61.0-139%	**Recovery less than lower data quality objective**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	EB2209950--045	Anonymous	**4:2 Fluorotelomer sulfonic acid (4:2 FTS)**	757124-72-4	27.3 %	62.0-145%	**Recovery less than lower data quality objective**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	EB2209950--045	Anonymous	**6:2 Fluorotelomer sulfonic acid (6:2 FTS)**	27619-97-2	24.4 %	64.0-140%	**Recovery less than lower data quality objective**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	EB2209950--045	Anonymous	**8:2 Fluorotelomer sulfonic acid (8:2 FTS)**	39108-34-4	13.9 %	65.0-137%	**Recovery less than lower data quality objective**

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	QC-4281165-002	----	**Perfluorobutane sulfonic acid (PFBS)**	375-73-5	140 %	72.0-130%	**Recovery greater than upper control limit**
EP231A: Perfluoroalkyl Sulfonic Acids	QC-4281165-002	----	**Perfluoropentane sulfonic acid (PFPeS)**	2706-91-4	139 %	71.0-127%	**Recovery greater than upper control limit**
EP231B: Perfluoroalkyl Carboxylic Acids	QC-4281165-002	----	**Perfluoroheptanoic acid (PFHpA)**	375-85-9	134 %	72.0-130%	**Recovery greater than upper control limit**

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries - Continued							
EP231B: Perfluoroalkyl Carboxylic Acids	QC-4281165-002	----	**Perfluorotetradecanoic acid (PFTeDA)**	376-06-7	140 %	71.0-132%	**Recovery greater than upper control limit**
EP231C: Perfluoroalkyl Sulfonamides	QC-4281165-002	----	**N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)**	2355-31-9	137 %	65.0-136%	**Recovery greater than upper control limit**
EP231C: Perfluoroalkyl Sulfonamides	QC-4281165-002	----	**N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)**	2991-50-6	138 %	61.0-135%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2209951--013	0861_MW020_220406	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2209951--013	0861_MW020_220406	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	2	29	6.90	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	29	3.45	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / Client Sample ID(s)	***Sample Date***	*Extraction / Preparation*			*Analysis*		
		Date extracted	Due for extraction	Evaluation	***Date analysed***	Due for analysis	Evaluation

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) 0861_SD064_220406, 0861_SD067_220406, 0861_SD079_220406, 0861_SD080_220406, 0861_SD053_220406	**06-Apr-2022**	**----**	----	----	**11-Apr-2022**	20-Apr-2022	✓
HDPE Soil Jar (EA055) 0861_SD099_220329, 0861_SD100_220329	**29-Mar-2022**	**----**	----	----	**11-Apr-2022**	12-Apr-2022	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD064_220406, 0861_SD067_220406, 0861_SD079_220406, 0861_SD080_220406, 0861_SD053_220406	**06-Apr-2022**	**12-Apr-2022**	03-Oct-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD099_220329, 0861_SD100_220329	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0861_SD064_220406, 0861_SD067_220406, 0861_SD079_220406, 0861_SD080_220406, 0861_SD053_220406	**06-Apr-2022**	**12-Apr-2022**	03-Oct-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD099_220329, 0861_SD100_220329	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0861_SD064_220406, 0861_SD067_220406, 0861_SD079_220406, 0861_SD080_220406, 0861_SD053_220406	**06-Apr-2022**	**12-Apr-2022**	03-Oct-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD099_220329, 0861_SD100_220329	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD064_220406, 0861_SD067_220406, 0861_SD079_220406, 0861_SD080_220406, 0861_SD053_220406	**06-Apr-2022**	**12-Apr-2022**	03-Oct-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD099_220329, 0861_SD100_220329	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0861_SD064_220406, 0861_SD067_220406, 0861_SD079_220406, 0861_SD080_220406, 0861_SD053_220406	**06-Apr-2022**	**12-Apr-2022**	03-Oct-2022	✓	**14-Apr-2022**	22-May-2022	✓
HDPE Soil Jar (EP231X) 0861_SD099_220329, 0861_SD100_220329	**29-Mar-2022**	**12-Apr-2022**	25-Sep-2022	✓	**13-Apr-2022**	22-May-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_MW042_220405, 0861_MW043_220405, 0861_MW041_220405	**05-Apr-2022**	**21-Apr-2022**	02-Oct-2022	✓	**21-Apr-2022**	02-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW053_220406, 0861_MW020_220406, 0861_MW012_220406, 0861_MW026_220406, 0861_MW033_220406, 0861_MW007_220406, 0861_MW025_220406, 0861_MW032_220406, 0861_MW005_220406	**06-Apr-2022**	**20-Apr-2022**	03-Oct-2022	✓	**21-Apr-2022**	03-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW064_220406, 0861_SW079_220406, 0861_SW080_220406	**06-Apr-2022**	**21-Apr-2022**	03-Oct-2022	✓	**21-Apr-2022**	03-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW006_220407, 0861_MW023_220407, 0861_MW049_220407	**07-Apr-2022**	**20-Apr-2022**	04-Oct-2022	✓	**21-Apr-2022**	04-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW099_220329, 0861_SW100_220329	**29-Mar-2022**	**20-Apr-2022**	25-Sep-2022	✓	**21-Apr-2022**	25-Sep-2022	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0861_MW042_220405, 0861_MW043_220405, 0861_MW041_220405	**05-Apr-2022**	**21-Apr-2022**	02-Oct-2022	✓	**21-Apr-2022**	02-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW053_220406, 0861_MW020_220406, 0861_MW012_220406, 0861_MW026_220406, 0861_MW033_220406, 0861_MW007_220406, 0861_MW025_220406, 0861_MW032_220406, 0861_MW005_220406	**06-Apr-2022**	**20-Apr-2022**	03-Oct-2022	✓	**21-Apr-2022**	03-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW064_220406, 0861_SW079_220406, 0861_SW080_220406	**06-Apr-2022**	**21-Apr-2022**	03-Oct-2022	✓	**21-Apr-2022**	03-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW006_220407, 0861_MW023_220407, 0861_MW049_220407	**07-Apr-2022**	**20-Apr-2022**	04-Oct-2022	✓	**21-Apr-2022**	04-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW099_220329, 0861_SW100_220329	**29-Mar-2022**	**20-Apr-2022**	25-Sep-2022	✓	**21-Apr-2022**	25-Sep-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0861_MW042_220405, 0861_MW043_220405, 0861_MW041_220405	**05-Apr-2022**	**21-Apr-2022**	02-Oct-2022	✓	**21-Apr-2022**	02-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW053_220406, 0861_MW020_220406, 0861_MW012_220406, 0861_MW026_220406, 0861_MW033_220406, 0861_MW007_220406, 0861_MW025_220406, 0861_MW032_220406, 0861_MW005_220406	**06-Apr-2022**	**20-Apr-2022**	03-Oct-2022	✓	**21-Apr-2022**	03-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW064_220406, 0861_SW079_220406, 0861_SW080_220406	**06-Apr-2022**	**21-Apr-2022**	03-Oct-2022	✓	**21-Apr-2022**	03-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW006_220407, 0861_MW023_220407, 0861_MW049_220407	**07-Apr-2022**	**20-Apr-2022**	04-Oct-2022	✓	**21-Apr-2022**	04-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW099_220329, 0861_SW100_220329	**29-Mar-2022**	**20-Apr-2022**	25-Sep-2022	✓	**21-Apr-2022**	25-Sep-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_MW042_220405, 0861_MW043_220405, 0861_MW041_220405	**05-Apr-2022**	**21-Apr-2022**	02-Oct-2022	✓	**21-Apr-2022**	02-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW053_220406, 0861_MW020_220406, 0861_MW012_220406, 0861_MW026_220406, 0861_MW033_220406, 0861_MW007_220406, 0861_MW025_220406, 0861_MW032_220406, 0861_MW005_220406	**06-Apr-2022**	**20-Apr-2022**	03-Oct-2022	✓	**21-Apr-2022**	03-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW064_220406, 0861_SW079_220406, 0861_SW080_220406	**06-Apr-2022**	**21-Apr-2022**	03-Oct-2022	✓	**21-Apr-2022**	03-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW006_220407, 0861_MW023_220407, 0861_MW049_220407	**07-Apr-2022**	**20-Apr-2022**	04-Oct-2022	✓	**21-Apr-2022**	04-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW099_220329, 0861_SW100_220329	**29-Mar-2022**	**20-Apr-2022**	25-Sep-2022	✓	**21-Apr-2022**	25-Sep-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0861_MW042_220405, 0861_MW043_220405, 0861_MW041_220405	**05-Apr-2022**	**21-Apr-2022**	02-Oct-2022	✓	**21-Apr-2022**	02-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW053_220406, 0861_MW020_220406, 0861_MW012_220406, 0861_MW026_220406, 0861_MW033_220406, 0861_MW007_220406, 0861_MW025_220406, 0861_MW032_220406, 0861_MW005_220406	**06-Apr-2022**	**20-Apr-2022**	03-Oct-2022	✓	**21-Apr-2022**	03-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW064_220406, 0861_SW079_220406, 0861_SW080_220406	**06-Apr-2022**	**21-Apr-2022**	03-Oct-2022	✓	**21-Apr-2022**	03-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_MW006_220407, 0861_MW023_220407, 0861_MW049_220407	**07-Apr-2022**	**20-Apr-2022**	04-Oct-2022	✓	**21-Apr-2022**	04-Oct-2022	✓
HDPE (no PTFE) (EP231X) 0861_SW099_220329, 0861_SW100_220329	**29-Mar-2022**	**20-Apr-2022**	25-Sep-2022	✓	**21-Apr-2022**	25-Sep-2022	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	4	34	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	34	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	34	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	29	**6.90**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	29	**3.45**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2209951**	Page	: 1 of 15
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: PO BOX 1307 FORTITUDE VALLEY QLD, AUSTRALIA 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: ----	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 07-Apr-2022 14:00
Order number	: 60612563 3.1	Date Analysis Commenced	: 11-Apr-2022
C-O-C number	: ----	Issue Date	: 27-Apr-2022 16:39
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 27		
No. of samples analysed	: 27		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- **SPLIT WORK ORDER: It should be noted that ALS has split this work order over the following work order EB2209950/ EB2209951 due to the size of the sample numbers. For any further information regarding this processing of samples please contact ALS client services division on ALSEnviro.Brisbane@alsglobal.com**
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X PFAS: The LOR of particular analytes have been raised due to sample matrix interferences.
- EP231X PFAS: Particular samples required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- EP231X PFAS: Sample "0861_SD079_220406" required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly. Particular analytes have been further raised due to matrix interferences.
- EP231X PFAS: The LORs of PFOS and PFDS for sample '0861_SD099_220329' (EB2209951-025) have been raised due to sample matrix interferences.
- EP231X-(PFAS): Sample shows poor matrix spike recovery due to sample matrix interference. Confirmed by re-extraction and re-analysis.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_SD064_220406	0861_SD067_220406	0861_SD079_220406	0861_SD080_220406	0861_SD053_220406
			Sampling date / time	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00
Compound	CAS Number	LOR	Unit	EB2209951-005	EB2209951-006	EB2209951-008	EB2209951-010	EB2209951-012
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**57.6**	**59.2**	**44.6**	**45.8**	**16.6**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	**0.0007**	**0.0057**	<0.0005	**0.0028**	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	**0.0006**	**0.0091**	<0.0005	**0.0040**	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0062**	**0.0736**	**0.0165**	**0.0532**	**0.0004**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	**0.0005**	**0.0056**	**0.0022**	**0.0067**	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0770**	**0.748**	**0.180**	**0.339**	**0.0020**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	**0.0014**	**0.0233**	<0.0014	**0.0065**	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	**0.003**	<0.013	<0.002	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	**0.0006**	**0.0060**	<0.0005	**0.0022**	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	**0.0011**	**0.0191**	**0.0011**	**0.0057**	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	**0.0002**	**0.0030**	<0.0005	**0.0016**	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	**0.0007**	**0.0056**	<0.0008	**0.0051**	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	**0.0033**	<0.0005	**0.0028**	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	**0.0055**	<0.0005	**0.0035**	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	**0.0069**	<0.0005	**0.0076**	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	**0.0092**	<0.0005	**0.0087**	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	**0.0020**	<0.0005	**0.0035**	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	**0.0012**	<0.0012	**0.0018**	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	**0.0002**	**0.0023**	<0.0005	**0.0034**	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0012	<0.0012	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD064_220406	0861_SD067_220406	0861_SD079_220406	0861_SD080_220406	0861_SD053_220406
				Sampling date / time	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209951-005	EB2209951-006	EB2209951-008	EB2209951-010	EB2209951-012
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0012	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0012	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0012	<0.0012	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0010	<0.0005	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0024	<0.0005	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	**0.0026**	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	**0.0021**	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0892**	**0.932**	**0.200**	**0.463**	**0.0024**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0832**	**0.822**	**0.196**	**0.392**	**0.0024**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0865**	**0.864**	**0.198**	**0.412**	**0.0024**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**112**	**111**	**80.0**	**130**	**82.0**
13C8-PFOA	----	0.0002	%		**110**	**102**	**85.0**	**95.0**	**87.5**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD099_220329	0861_SD100_220329	----	----	----
				Sampling date / time	29-Mar-2022 00:00	29-Mar-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2209951-025	EB2209951-027	--------	--------	--------
					Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**49.9**	**34.7**	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0034	**0.0030**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0029	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD099_220329	0861_SD100_220329	----	----	----
				Sampling date / time	29-Mar-2022 00:00	29-Mar-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2209951-025	EB2209951-027	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	**0.0030**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	**0.0030**	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	**0.0030**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**130**	**132**	----	----	----
13C8-PFOA	----	0.0002	%		**113**	**114**	----	----	----

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW042_220405	0861_MW043_220405	0861_MW041_220405	0861_SW064_220406	0861_SW079_220406
				Sampling date / time	05-Apr-2022 00:00	05-Apr-2022 00:00	05-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00
					EB2209951-001	EB2209951-002	EB2209951-003	EB2209951-004	EB2209951-007
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.28**	**0.31**	**0.20**	**1.23**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.09**	**0.05**	**0.14**	**1.33**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	**0.21**	**0.14**	**0.74**	**8.57**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.46**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.02	**0.18**	**0.30**	**0.87**	**7.01**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.3	<0.1	<0.3
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.08**	**0.37**	<0.10	**0.55**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.14**	**0.21**	**0.19**	**1.94**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	**0.03**	**0.31**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.02	<0.02	**0.04**	**0.51**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.06	<0.06	<0.06	<0.06
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.06	<0.06	<0.06	<0.06
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.06	<0.06	<0.06	<0.06

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW042_220405	0861_MW043_220405	0861_MW041_220405	0861_SW064_220406	0861_SW079_220406
				Sampling date / time	05-Apr-2022 00:00	05-Apr-2022 00:00	05-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00
					EB2209951-001	EB2209951-002	EB2209951-003	EB2209951-004	EB2209951-007
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.06	<0.06	<0.06	<0.06
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.06	<0.06	<0.06	<0.06
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**0.08**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**0.98**	**1.38**	**2.21**	**22.0**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.39**	**0.44**	**1.61**	**15.6**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.89**	**1.33**	**2.07**	**20.2**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**111**	**119**	**110**	**112**	**109**
13C8-PFOA	----	0.02	%		**113**	**103**	**108**	**109**	**107**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW080_220406	0861_SW053_220406	0861_MW020_220406	0861_MW012_220406	0861_MW026_220406
				Sampling date / time	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209951-009	EB2209951-011	EB2209951-013	EB2209951-014	EB2209951-015
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**2.54**	<0.02	**1.42**	<0.05	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**3.15**	<0.02	**1.57**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**19.8**	**0.11**	**13.8**	<0.02	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**1.21**	<0.02	**1.55**	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**16.8**	**0.11**	**72.1**	**0.17**	<0.02
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.5**	<0.1	<0.9	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**1.06**	<0.02	**2.71**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**4.14**	<0.02	**4.22**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.63**	<0.02	**1.19**	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**1.19**	<0.01	**2.60**	<0.02	<0.02
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.03**	<0.02	**0.51**	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	**0.11**	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.06	<0.05	<0.12	<0.06	<0.06
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.06	<0.05	<0.12	<0.06	<0.06
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.06	<0.05	<0.12	<0.06	<0.06

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW080_220406	0861_SW053_220406	0861_MW020_220406	0861_MW012_220406	0861_MW026_220406
				Sampling date / time	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209951-009	EB2209951-011	EB2209951-013	EB2209951-014	EB2209951-015
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.06	<0.05	<0.12	<0.06	<0.06
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.06	<0.05	<0.12	<0.06	<0.06
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.05	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.14**	<0.05	**0.71**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.10	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**51.2**	**0.22**	**102**	**0.17**	<0.02
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**36.6**	**0.22**	**85.9**	**0.17**	<0.02
Sum of PFAS (WA DER List)	----	0.01	µg/L		**46.8**	**0.22**	**98.8**	**0.17**	<0.02
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**106**	**111**	**110**	**124**	**109**
13C8-PFOA	----	0.02	%		**108**	**108**	**108**	**99.2**	**103**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW033_220406	0861_MW007_220406	0861_MW025_220406	0861_MW032_220406	0861_MW005_220406
				Sampling date / time	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00
					EB2209951-016	EB2209951-017	EB2209951-018	EB2209951-019	EB2209951-020
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.04	**0.19**	**0.28**	**2.21**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.18**	**0.21**	**2.07**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	**1.26**	**1.17**	**10.2**	**0.05**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.11**	**0.04**	**0.92**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.04	**4.69**	**0.46**	**24.6**	**0.02**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	**0.2**	**0.7**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.08**	**0.21**	**0.86**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.27**	**0.29**	**4.23**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.05**	**0.08**	**1.11**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.11**	**0.12**	**2.67**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	**0.06**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.06	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	**0.10**	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.06	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.06	<0.05

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW033_220406	0861_MW007_220406	0861_MW025_220406	0861_MW032_220406	0861_MW005_220406
				Sampling date / time	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00	06-Apr-2022 00:00
					EB2209951-016	EB2209951-017	EB2209951-018	EB2209951-019	EB2209951-020
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.06	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.06	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	**0.08**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**7.04**	**3.06**	**49.7**	**0.07**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**5.95**	**1.63**	**34.8**	**0.07**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**6.65**	**2.81**	**46.7**	**0.07**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**106**	**99.7**	**102**	**124**	**99.1**
13C8-PFOA	----	0.02	%		**105**	**105**	**108**	**107**	**108**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW006_220407	0861_MW023_220407	0861_MW049_220407	0861_SW099_220329	0861_SW100_220329
				Sampling date / time	07-Apr-2022 00:00	07-Apr-2022 00:00	07-Apr-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209951-021	EB2209951-022	EB2209951-023	EB2209951-024	EB2209951-026
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.82**	**0.16**	**0.42**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.83**	**0.16**	**0.36**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**10.5**	**0.66**	**1.68**	**0.02**	**0.02**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.45**	<0.02	**0.08**	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**42.0**	**0.18**	**3.15**	**0.05**	**0.06**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.8**	<0.1	**0.2**	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**2.11**	<0.02	**0.18**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**3.79**	**0.04**	**0.57**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.75**	<0.02	**0.08**	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**1.03**	<0.01	**0.16**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		**0.28**	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW006_220407	0861_MW023_220407	0861_MW049_220407	0861_SW099_220329	0861_SW100_220329
				Sampling date / time	07-Apr-2022 00:00	07-Apr-2022 00:00	07-Apr-2022 00:00	29-Mar-2022 00:00	29-Mar-2022 00:00
Compound	CAS Number	LOR	Unit		EB2209951-021	EB2209951-022	EB2209951-023	EB2209951-024	EB2209951-026
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.12	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.39**	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**65.8**	**1.20**	**6.88**	**0.07**	**0.08**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**52.5**	**0.84**	**4.83**	**0.07**	**0.08**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**63.2**	**1.04**	**6.44**	**0.07**	**0.08**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**106**	**111**	**112**	**102**	**115**
13C8-PFOA	----	0.02	%		**105**	**106**	**105**	**105**	**108**

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

Australian Government
Department of Industry, Science, Energy and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: [redacted]

Email: [redacted]

Telephone:

Fax:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: [redacted]

Address: [redacted]

Email: [redacted]

Telephone: [redacted]

Fax:

SAMPLE DETAILS

NMI Job Name: AECO06/220411

Total No. of Samples: 15

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N22/006491	19-APR-2022	0861_QC267_220328	SOIL 28/03/2022
N22/006492	19-APR-2022	0861_QC268_220328	WATER 28/03/2022
N22/006493	19-APR-2022	0861_QC269_220328	WATER 28/03/2022
N22/006494	19-APR-2022	0861_QC270_220328	SOIL 28/03/2022
N22/006495	19-APR-2022	0861_QC271_220329	WATER 29/03/2022
N22/006496	19-APR-2022	0861_QC272_220330	WATER 30/03/2022
N22/006497	19-APR-2022	0861_QC273_220331	SOIL 31/03/2022
N22/006498	19-APR-2022	0861_QC274_220331	SOIL 31/03/2022
N22/006499	19-APR-2022	0861_QC275_220331	WATER 31/03/2022
N22/006500	19-APR-2022	0861_QC276_220401	WATER 01/04/2022
N22/006501	19-APR-2022	0861_QC277_220401	SOIL 01/04/2022

N22/006502	19-APR-2022	0861_QC278_220401	WATER 01/04/2022
N22/006503	19-APR-2022	0861_QC279_220404	WATER 04/04/2022
N22/006504	19-APR-2022	0861_QC280_220406	WATER 06/04/2022
N22/006505	19-APR-2022	0861_QC281_220406	WATER 06/04/2022

SAMPLE RECEIVED CONDITION

Date samples received:	11-APR-2022
Sample received in good order:	Yes
NMI Quotation no. provided:	
Client purchase order number:	60612563_3_1
Temperature of samples:	Chilled
Comments:	
Mode of Delivery:	Courier

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/220411 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	103	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	106	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	104	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	101	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	109	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	106	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	104	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	120	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	128	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	122	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	142	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	134	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	101	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	107	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	118	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	104	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	103	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	106	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	100	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	106	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	94	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	100	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	110	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	107	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	99	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	88	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	107	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	106	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	111	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	89	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	103	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Organics Manager, NMI-North Ryde

Date: **14/04/2022**

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/220411 **Sample Matrix:** Solid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		mg/kg	mg/kg	mg/kg	mg/kg	%	%	%
				N22/006491				N22/006491
PFBA (375-22-4)	NR70	0.002	<0.002	<0.002	<0.002	-	102	100
PFPeA (2706-90-3)	NR70	0.002	<0.002	<0.002	<0.002	-	105	98
PFHxA (307-24-4)	NR70	0.001	<0.001	<0.001	<0.001	-	106	100
PFHpA (375-85-9)	NR70	0.001	<0.001	<0.001	<0.001	-	105	103
PFOA (335-67-1)	NR70	0.001	<0.001	<0.001	<0.001	-	109	110
PFNA (375-95-1)	NR70	0.001	<0.001	<0.001	<0.001	-	107	100
PFDA (335-76-2)	NR70	0.001	<0.001	<0.001	<0.001	-	109	100
PFUdA (2058-94-8)	NR70	0.002	<0.002	<0.002	<0.002	-	119	113
PFDoA (307-55-1)	NR70	0.002	<0.002	<0.002	<0.002	-	96	79
PFTrDA (72629-94-8)	NR70	0.002	<0.002	<0.002	<0.002	-	122	104
PFTeDA (376-06-7)	NR70	0.002	<0.002	<0.002	<0.002	-	107	107
PFHxDA (67905-19-5)	NR70	0.002	<0.002	<0.002	<0.002	-	88	90
PFODA (16517-11-6)	NR70	0.005	<0.005	<0.005	<0.005	-	119	94
FOUEA (70887-84-2)	NR70	0.001	<0.001	<0.001	<0.001	-	97	99
PFBS (375-73-5)	NR70	0.001	<0.001	<0.001	<0.001	-	109	105
PFPeS (2706-91-4)	NR70	0.001	<0.001	<0.001	<0.001	-	126	121
PFHxS (355-46-4)	NR70	0.001	<0.001	0.0014	0.0011	24	105	93
PFHpS (375-92-8)	NR70	0.001	<0.001	<0.001	<0.001	-	107	108
PFOS (1763-23-1)	NR70	0.002	<0.002	0.018	0.013	32	110	-65
PFNS (68259-12-1)	NR70	0.001	<0.001	<0.001	<0.001	-	107	103
PFDS (335-77-3)	NR70	0.001	<0.001	<0.001	<0.001	-	105	106
PFOSA (754-91-6)	NR70	0.001	<0.001	<0.001	<0.001	-	107	103
N-MeFOSA (31506-32-8)	NR70	0.002	<0.002	<0.002	<0.002	-	99	97
N-EtFOSA (4151-50-2)	NR70	0.002	<0.002	<0.002	<0.002	-	96	97
N-MeFOSAA (2355-31-9)	NR70	0.002	<0.002	<0.002	<0.002	-	105	106
N-EtFOSAA(2991-50-6)	NR70	0.002	<0.002	<0.002	<0.002	-	107	112
N-MeFOSE (24448-09-7)	NR70	0.005	<0.005	<0.005	<0.005	-	95	79
N-EtFOSE (1691-99-2)	NR70	0.005	<0.005	<0.005	<0.005	-	95	98
4:2 FTS (757124-72-4)	NR70	0.001	<0.001	<0.001	<0.001	-	111	107
6:2 FTS (27619-97-2)	NR70	0.001	<0.001	<0.001	<0.001	-	107	108
8:2 FTS (39108-34-4)	NR70	0.001	<0.001	<0.001	<0.001	-	110	107
10:2 FTS (120226-60-0)	NR70	0.002	<0.002	<0.002	<0.002	-	90	96
8:2 diPAP (678-41-1)	NR70	0.002	<0.002	<0.002	<0.002	-	96	96

Results expressed in percentage (%) or mg/kg wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Organics Manager, NMI-North Ryde

Date: **14/04/2022**

[redacted]

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/220411
	[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_3_1
		Date Received	: 11-APR-2022
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N22/006491	0861_QC267_220328	SOIL 28/03/2022
N22/006494	0861_QC270_220328	SOIL 28/03/2022
N22/006497	0861_QC273_220331	SOIL 31/03/2022
N22/006498	0861_QC274_220331	SOIL 31/03/2022

Lab Reg No.		N22/006491	N22/006494	N22/006497	N22/006498	
Date Sampled		28-MAR-2022	28-MAR-2022	31-MAR-2022	31-MAR-2022	
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFPeA (2706-90-3)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFHxA (307-24-4)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFHpA (375-85-9)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFOA (335-67-1)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFNA (375-95-1)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFDA (335-76-2)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFUdA (2058-94-8)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFDoA (307-55-1)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFTrDA (72629-94-8)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFTeDA (376-06-7)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFHxDA (67905-19-5)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFODA (16517-11-6)	mg/kg	<0.005	<0.005	<0.005	<0.005	NR70
FOUEA (70887-84-2)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFBS (375-73-5)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFPeS (2706-91-4)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFHxS (355-46-4)	mg/kg	0.0014	<0.001	<0.001	<0.001	NR70
PFHpS (375-92-8)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFOS (1763-23-1)	mg/kg	0.018	<0.002	<0.002	<0.002	NR70
PFNS (68259-12-1)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFDS (335-77-3)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
PFOSA (754-91-6)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
N-MeFOSA (31506-32-8)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
N-EtFOSA (4151-50-2)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
N-MeFOSAA (2355-31-9)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
N-EtFOSAA(2991-50-6)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
N-MeFOSE (24448-09-7)	mg/kg	<0.005	<0.005	<0.005	<0.005	NR70

REPORT OF ANALYSIS

Lab Reg No.		N22/006491	N22/006494	N22/006497	N22/006498	
Date Sampled		28-MAR-2022	28-MAR-2022	31-MAR-2022	31-MAR-2022	
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
N-EtFOSE (1691-99-2)	mg/kg	<0.005	<0.005	<0.005	<0.005	NR70
4:2 FTS (757124-72-4)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
6:2 FTS (27619-97-2)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
8:2 FTS (39108-34-4)	mg/kg	<0.001	<0.001	<0.001	<0.001	NR70
10:2 FTS (120226-60-0)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
8:2 diPAP (678-41-1)	mg/kg	<0.002	<0.002	<0.002	<0.002	NR70
PFBA (Surrogate Recovery)	%	111	115	114	118	NR70
PFPeA (Surrogate Recovery)	%	108	116	109	114	NR70
PFHxA (Surrogate Recovery)	%	108	116	120	122	NR70
PFHpA (Surrogate Recovery)	%	106	110	113	116	NR70
PFOA (Surrogate Recovery)	%	115	113	124	119	NR70
PFNA (Surrogate Recovery)	%	115	115	103	120	NR70
PFDA (Surrogate Recovery)	%	128	113	115	130	NR70
PFUdA (Surrogate Recovery)	%	124	125	109	112	NR70
PFDoA (Surrogate Recovery)	%	114	115	101	103	NR70
PFTeDA (Surrogate Recovery)	%	118	165	123	124	NR70
PFHxDA (Surrogate Recovery)	%	83	110	114	101	NR70
FOUEA (Surrogate Recovery)	%	73	71	17	74	NR70
PFBS (Surrogate Recovery)	%	99	102	112	110	NR70
PFHxS (Surrogate Recovery)	%	107	116	116	119	NR70
PFOS (Surrogate Recovery)	%	108	118	117	113	NR70
PFOSA (Surrogate Recovery)	%	111	107	98	106	NR70
N-MeFOSA (Surrogate Recovery)	%	97	103	109	112	NR70
N-EtFOSA (Surrogate Recovery)	%	111	123	123	124	NR70
N-MeFOSAA (Surrogate Recovery)	%	107	92	62	92	NR70
N-EtFOSAA (Surrogate Recovery)	%	118	102	72	97	NR70
N-MeFOSE (Surrogate Recovery)	%	75	76	86	67	NR70
N-EtFOSE (Surrogate Recovery)	%	73	67	76	70	NR70
4:2 FTS (Surrogate Recovery)	%	111	102	92	117	NR70
6:2 FTS (Surrogate Recovery)	%	98	94	102	106	NR70
8:2 FTS (Surrogate Recovery)	%	117	100	71	107	NR70
8:2 diPAP (Surrogate Recovery)	%	112	107	58	104	NR70
Dates						
Date extracted		13-APR-2022	13-APR-2022	13-APR-2022	13-APR-2022	
Date analysed		13-APR-2022	13-APR-2022	13-APR-2022	13-APR-2022	

N22/006491
to
N22/006501

REPORT OF ANALYSIS

PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
High PFAS surrogate recoveries accepted - results corrected for recovery.
Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

[redacted]

19-APR-2022

Lab Reg No.		**N22/006491**	**N22/006494**	**N22/006497**	**N22/006498**	
Date Sampled		**28-MAR-2022**	**28-MAR-2022**	**31-MAR-2022**	**31-MAR-2022**	
	Units					**Method**
Trace Elements						
Total Solids	%	46.3	70.0	82.3	70.8	NT2_49
Dates						
Date extracted		12-APR-2022	12-APR-2022	12-APR-2022	12-APR-2022	
Date analysed		14-APR-2022	14-APR-2022	14-APR-2022	14-APR-2022	

[redacted]

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/220411
	[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_3_1
		Date Received	: 11-APR-2022
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N22/006501	0861_QC277_220401	SOIL 01/04/2022

Lab Reg No.		N22/006501				
Date Sampled		01-APR-2022				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	mg/kg	<0.002				NR70
PFPeA (2706-90-3)	mg/kg	<0.002				NR70
PFHxA (307-24-4)	mg/kg	<0.001				NR70
PFHpA (375-85-9)	mg/kg	<0.001				NR70
PFOA (335-67-1)	mg/kg	<0.001				NR70
PFNA (375-95-1)	mg/kg	<0.001				NR70
PFDA (335-76-2)	mg/kg	<0.001				NR70
PFUdA (2058-94-8)	mg/kg	<0.002				NR70
PFDoA (307-55-1)	mg/kg	<0.002				NR70
PFTrDA (72629-94-8)	mg/kg	<0.002				NR70
PFTeDA (376-06-7)	mg/kg	<0.002				NR70
PFHxDA (67905-19-5)	mg/kg	<0.002				NR70
PFODA (16517-11-6)	mg/kg	<0.005				NR70
FOUEA (70887-84-2)	mg/kg	<0.001				NR70
PFBS (375-73-5)	mg/kg	<0.001				NR70
PFPeS (2706-91-4)	mg/kg	<0.001				NR70
PFHxS (355-46-4)	mg/kg	<0.001				NR70
PFHpS (375-92-8)	mg/kg	<0.001				NR70
PFOS (1763-23-1)	mg/kg	0.017				NR70
PFNS (68259-12-1)	mg/kg	<0.001				NR70
PFDS (335-77-3)	mg/kg	<0.001				NR70
PFOSA (754-91-6)	mg/kg	<0.001				NR70
N-MeFOSA (31506-32-8)	mg/kg	<0.002				NR70
N-EtFOSA (4151-50-2)	mg/kg	<0.002				NR70
N-MeFOSAA (2355-31-9)	mg/kg	<0.002				NR70
N-EtFOSAA(2991-50-6)	mg/kg	<0.002				NR70
N-MeFOSE (24448-09-7)	mg/kg	<0.005				NR70
N-EtFOSE (1691-99-2)	mg/kg	<0.005				NR70
4:2 FTS (757124-72-4)	mg/kg	<0.001				NR70
6:2 FTS (27619-97-2)	mg/kg	<0.001				NR70

REPORT OF ANALYSIS

Lab Reg No.		N22/006501				
Date Sampled		01-APR-2022				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
8:2 FTS (39108-34-4)	mg/kg	<0.001				NR70
10:2 FTS (120226-60-0)	mg/kg	<0.002				NR70
8:2 diPAP (678-41-1)	mg/kg	<0.002				NR70
PFBA (Surrogate Recovery)	%	114				NR70
PFPeA (Surrogate Recovery)	%	111				NR70
PFHxA (Surrogate Recovery)	%	113				NR70
PFHpA (Surrogate Recovery)	%	110				NR70
PFOA (Surrogate Recovery)	%	114				NR70
PFNA (Surrogate Recovery)	%	118				NR70
PFDA (Surrogate Recovery)	%	132				NR70
PFUdA (Surrogate Recovery)	%	114				NR70
PFDoA (Surrogate Recovery)	%	99				NR70
PFTeDA (Surrogate Recovery)	%	122				NR70
PFHxDA (Surrogate Recovery)	%	91				NR70
FOUEA (Surrogate Recovery)	%	48				NR70
PFBS (Surrogate Recovery)	%	100				NR70
PFHxS (Surrogate Recovery)	%	110				NR70
PFOS (Surrogate Recovery)	%	112				NR70
PFOSA (Surrogate Recovery)	%	103				NR70
N-MeFOSA (Surrogate Recovery)	%	96				NR70
N-EtFOSA (Surrogate Recovery)	%	113				NR70
N-MeFOSAA (Surrogate Recovery)	%	93				NR70
N-EtFOSAA (Surrogate Recovery)	%	102				NR70
N-MeFOSE (Surrogate Recovery)	%	47				NR70
N-EtFOSE (Surrogate Recovery)	%	46				NR70
4:2 FTS (Surrogate Recovery)	%	101				NR70
6:2 FTS (Surrogate Recovery)	%	88				NR70
8:2 FTS (Surrogate Recovery)	%	90				NR70
8:2 diPAP (Surrogate Recovery)	%	86				NR70
Dates						
Date extracted		13-APR-2022				
Date analysed		13-APR-2022				

[redacted]

[redacted]

19-APR-2022

[redacted]

REPORT OF ANALYSIS

Lab Reg No.		N22/006501				
Date Sampled		01-APR-2022				
	Units					Method
Trace Elements						
Total Solids	%	69.1				NT2_49
Dates						
Date extracted		12-APR-2022				
Date analysed		14-APR-2022				

[redacted]

[redacted]

19-APR-2022

All results are expressed on a dry weight basis.

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/220411
	[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_3_1
		Date Received	: 11-APR-2022
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N22/006492	0861_QC268_220328	WATER 28/03/2022
N22/006493	0861_QC269_220328	WATER 28/03/2022
N22/006495	0861_QC271_220329	WATER 29/03/2022
N22/006496	0861_QC272_220330	WATER 30/03/2022

Lab Reg No.			N22/006492	N22/006493	N22/006495	N22/006496	
Date Sampled			28-MAR-2022	28-MAR-2022	29-MAR-2022	30-MAR-2022	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	0.34	<0.05	<0.05	0.30	NR70
PFPeA (2706-90-3)		ug/L	0.81	<0.02	<0.02	0.52	NR70
PFHxA (307-24-4)		ug/L	1.3	<0.01	<0.01	2.2	NR70
PFHpA (375-85-9)		ug/L	0.30	<0.01	<0.01	0.52	NR70
PFOA (335-67-1)		ug/L	0.34	<0.01	<0.01	1.5	NR70
PFNA (375-95-1)		ug/L	0.024	<0.01	<0.01	0.035	NR70
PFDA (335-76-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFUdA (2058-94-8)		ug/L	0.014	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)		ug/L	0.032	<0.01	0.017	<0.01	NR70
PFTrDA (72629-94-8)		ug/L	0.042	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)		ug/L	0.039	<0.02	0.020	<0.02	NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)		ug/L	0.014	<0.01	<0.01	<0.01	NR70
PFPeS (2706-91-4)		ug/L	0.51	<0.01	<0.01	1.6	NR70
PFHxS (355-46-4)		ug/L	2.1	<0.01	<0.01	19	NR70
PFHpS (375-92-8)		ug/L	0.084	<0.01	<0.01	1.1	NR70
PFOS (1763-23-1)		ug/L	1.6	<0.02	<0.02	30	NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01	<0.01	0.039	NR70
PFBS (375-73-5)		ug/L	0.58	<0.01	<0.01	1.1	NR70
PFOSA (754-91-6)		ug/L	0.014	<0.01	<0.01	<0.01	NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)		ug/L	0.027	<0.01	0.039	<0.01	NR70
N-EtFOSAA(2991-50-6)		ug/L	0.039	<0.01	0.044	<0.01	NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70

REPORT OF ANALYSIS

Lab Reg No.			N22/006492	N22/006493	N22/006495	N22/006496	
Date Sampled			28-MAR-2022	28-MAR-2022	29-MAR-2022	30-MAR-2022	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)		ug/L	0.12	<0.01	<0.01	0.032	NR70
8:2 FTS (39108-34-4)		ug/L	<0.01	<0.01	<0.01	0.015	NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)		%	105	106	99	100	NR70
PFPeA (Surrogate Recovery)		%	135	127	163	119	NR70
PFHxA (Surrogate Recovery)		%	94	94	94	84	NR70
PFHpA (Surrogate Recovery)		%	103	97	90	101	NR70
PFOA (Surrogate Recovery)		%	107	97	96	100	NR70
PFNA (Surrogate Recovery)		%	94	116	103	62	NR70
PFDA (Surrogate Recovery)		%	100	114	107	92	NR70
PFUdA (Surrogate Recovery)		%	80	86	101	86	NR70
PFDoA (Surrogate Recovery)		%	68	94	90	88	NR70
PFTeDA (Surrogate Recovery)		%	83	92	103	83	NR70
PFHxDA (Surrogate Recovery)		%	79	86	94	85	NR70
FOUEA (Surrogate Recovery)		%	80	77	66	78	NR70
PFBS (Surrogate Recovery)		%	96	90	93	103	NR70
PFHxS (Surrogate Recovery)		%	98	97	101	82	NR70
PFOS (Surrogate Recovery)		%	100	103	108	83	NR70
PFOSA (Surrogate Recovery)		%	68	80	72	69	NR70
N-MeFOSA (Surrogate Recovery)		%	53	55	51	60	NR70
N-EtFOSA (Surrogate Recovery)		%	53	61	55	65	NR70
N-MeFOSAA (Surrogate Recovery)		%	64	81	72	73	NR70
N-EtFOSAA (Surrogate Recovery)		%	60	77	70	71	NR70
N-MeFOSE (Surrogate Recovery)		%	59	77	55	75	NR70
N-EtFOSE (Surrogate Recovery)		%	53	54	48	71	NR70
4:2 FTS (Surrogate Recovery)		%	178	143	182	178	NR70
6:2 FTS (Surrogate Recovery)		%	120	97	111	95	NR70
8:2 FTS (Surrogate Recovery)		%	89	96	94	87	NR70
8:2 diPAP (Surrogate Recovery)		%	71	86	85	79	NR70
Dates							
Date extracted			13-APR-2022	13-APR-2022	13-APR-2022	13-APR-2022	
Date analysed			13-APR-2022	13-APR-2022	13-APR-2022	13-APR-2022	

N22/006492
to
N22/006505

PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
High PFAS surrogate recoveries accepted - results corrected for recovery.
Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

[redacted]

19-APR-2022

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/220411
	[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_3_1
		Date Received	: 11-APR-2022
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N22/006499	0861_QC275_220331	WATER 31/03/2022
N22/006500	0861_QC276_220401	WATER 01/04/2022
N22/006502	0861_QC278_220401	WATER 01/04/2022
N22/006503	0861_QC279_220404	WATER 04/04/2022

Lab Reg No.			N22/006499	N22/006500	N22/006502	N22/006503	
Date Sampled			31-MAR-2022	01-APR-2022	01-APR-2022	04-APR-2022	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
PFPeA (2706-90-3)		ug/L	<0.02	<0.02	<0.02	0.021	NR70
PFHxA (307-24-4)		ug/L	<0.01	<0.01	<0.01	0.077	NR70
PFHpA (375-85-9)		ug/L	<0.01	<0.01	<0.01	0.013	NR70
PFOA (335-67-1)		ug/L	<0.01	<0.01	<0.01	0.023	NR70
PFNA (375-95-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDA (335-76-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFPeS (2706-91-4)		ug/L	<0.01	<0.01	<0.01	0.075	NR70
PFHxS (355-46-4)		ug/L	<0.01	<0.01	<0.01	0.38	NR70
PFHpS (375-92-8)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFOS (1763-23-1)		ug/L	<0.02	<0.02	<0.02	0.12	NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFBS (375-73-5)		ug/L	<0.01	<0.01	<0.01	0.099	NR70
PFOSA (754-91-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70

REPORT OF ANALYSIS

Lab Reg No.			N22/006499	N22/006500	N22/006502	N22/006503	
Date Sampled			31-MAR-2022	01-APR-2022	01-APR-2022	04-APR-2022	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 FTS (39108-34-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)		%	104	102	108	103	NR70
PFPeA (Surrogate Recovery)		%	134	148	139	164	NR70
PFHxA (Surrogate Recovery)		%	100	101	108	94	NR70
PFHpA (Surrogate Recovery)		%	98	99	104	96	NR70
PFOA (Surrogate Recovery)		%	100	99	106	96	NR70
PFNA (Surrogate Recovery)		%	98	98	101	93	NR70
PFDA (Surrogate Recovery)		%	93	104	104	86	NR70
PFUdA (Surrogate Recovery)		%	81	89	105	82	NR70
PFDoA (Surrogate Recovery)		%	76	83	94	75	NR70
PFTeDA (Surrogate Recovery)		%	71	101	92	71	NR70
PFHxDA (Surrogate Recovery)		%	73	61	92	80	NR70
FOUEA (Surrogate Recovery)		%	86	65	79	62	NR70
PFBS (Surrogate Recovery)		%	98	94	99	90	NR70
PFHxS (Surrogate Recovery)		%	100	100	109	98	NR70
PFOS (Surrogate Recovery)		%	106	96	106	104	NR70
PFOSA (Surrogate Recovery)		%	75	68	80	54	NR70
N-MeFOSA (Surrogate Recovery)		%	62	40	62	26	NR70
N-EtFOSA (Surrogate Recovery)		%	66	42	66	28	NR70
N-MeFOSAA (Surrogate Recovery)		%	69	73	65	59	NR70
N-EtFOSAA (Surrogate Recovery)		%	68	70	68	59	NR70
N-MeFOSE (Surrogate Recovery)		%	71	60	67	39	NR70
N-EtFOSE (Surrogate Recovery)		%	61	47	60	34	NR70
4:2 FTS (Surrogate Recovery)		%	175	179	181	191	NR70
6:2 FTS (Surrogate Recovery)		%	107	118	123	113	NR70
8:2 FTS (Surrogate Recovery)		%	98	103	99	85	NR70
8:2 diPAP (Surrogate Recovery)		%	76	84	96	73	NR70
Dates							
Date extracted			13-APR-2022	13-APR-2022	13-APR-2022	13-APR-2022	
Date analysed			13-APR-2022	13-APR-2022	13-APR-2022	13-APR-2022	

REPORT OF ANALYSIS

Lab Reg No.			N22/006499	N22/006500	N22/006502	N22/006503	
Date Sampled			31-MAR-2022	01-APR-2022	01-APR-2022	04-APR-2022	
		Units					Method

[redacted]

[redacted]

19-APR-2022

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/220411
	[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_3_1
		Date Received	: 11-APR-2022
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N22/006504	0861_QC280_220406	WATER 06/04/2022
N22/006505	0861_QC281_220406	WATER 06/04/2022

Lab Reg No.			N22/006504	N22/006505			
Date Sampled			06-APR-2022	06-APR-2022			
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	0.069	<0.05			NR70
PFPeA (2706-90-3)		ug/L	0.054	<0.02			NR70
PFHxA (307-24-4)		ug/L	0.12	<0.01			NR70
PFHpA (375-85-9)		ug/L	0.015	<0.01			NR70
PFOA (335-67-1)		ug/L	0.024	<0.01			NR70
PFNA (375-95-1)		ug/L	<0.01	<0.01			NR70
PFDA (335-76-2)		ug/L	<0.01	<0.01			NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01			NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01			NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02			NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02			NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02			NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05			NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01			NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01			NR70
PFPeS (2706-91-4)		ug/L	0.097	<0.01			NR70
PFHxS (355-46-4)		ug/L	0.55	<0.01			NR70
PFHpS (375-92-8)		ug/L	0.013	<0.01			NR70
PFOS (1763-23-1)		ug/L	0.60	<0.02			NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01			NR70
PFBS (375-73-5)		ug/L	0.14	<0.01			NR70
PFOSA (754-91-6)		ug/L	<0.01	<0.01			NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02			NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02			NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01			NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01			NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05			NR70
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05			NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01			NR70

REPORT OF ANALYSIS

Lab Reg No.			N22/006504	N22/006505			
Date Sampled			06-APR-2022	06-APR-2022			
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
6:2 FTS (27619-97-2)		ug/L	<0.01	<0.01			NR70
8:2 FTS (39108-34-4)		ug/L	<0.01	<0.01			NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01			NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02			NR70
PFBA (Surrogate Recovery)		%	104	105			NR70
PFPeA (Surrogate Recovery)		%	207	120			NR70
PFHxA (Surrogate Recovery)		%	91	110			NR70
PFHpA (Surrogate Recovery)		%	96	107			NR70
PFOA (Surrogate Recovery)		%	108	113			NR70
PFNA (Surrogate Recovery)		%	104	90			NR70
PFDA (Surrogate Recovery)		%	110	97			NR70
PFUdA (Surrogate Recovery)		%	107	87			NR70
PFDoA (Surrogate Recovery)		%	84	85			NR70
PFTeDA (Surrogate Recovery)		%	73	90			NR70
PFHxDA (Surrogate Recovery)		%	77	89			NR70
FOUEA (Surrogate Recovery)		%	69	94			NR70
PFBS (Surrogate Recovery)		%	92	98			NR70
PFHxS (Surrogate Recovery)		%	96	108			NR70
PFOS (Surrogate Recovery)		%	104	104			NR70
PFOSA (Surrogate Recovery)		%	72	75			NR70
N-MeFOSA (Surrogate Recovery)		%	31	71			NR70
N-EtFOSA (Surrogate Recovery)		%	31	81			NR70
N-MeFOSAA (Surrogate Recovery)		%	78	81			NR70
N-EtFOSAA (Surrogate Recovery)		%	76	77			NR70
N-MeFOSE (Surrogate Recovery)		%	50	79			NR70
N-EtFOSE (Surrogate Recovery)		%	45	87			NR70
4:2 FTS (Surrogate Recovery)		%	230	108			NR70
6:2 FTS (Surrogate Recovery)		%	155	103			NR70
8:2 FTS (Surrogate Recovery)		%	115	85			NR70
8:2 diPAP (Surrogate Recovery)		%	70	78			NR70
Dates							
Date extracted			13-APR-2022	13-APR-2022			
Date analysed			13-APR-2022	13-APR-2022			

[redacted]

[redacted]

19-APR-2022

[redacted]

REPORT OF ANALYSIS

This Report supersedes reports: *RN1348939*

[redacted]

Appendix F

Equipment Calibration Certificates

Appendix F Equipment Calibration Certificates

Appendix G

Groundwater Level Data

Appendix G Groundwater Level Data

EQUIPMENT CERTIFICATION REPORT

KENNARDS HIRE

PGN9003871 WATER QUALITY METER – MULTIFUNCTION

Plant Number: 1089689

SENSOR	CONCENTRATION	SPAN 1	SPAN 2	TRACEABILITY	PASS
pH	pH 7.00 / pH 4.00	7.00 pH	4.00 pH	378672 368681	☑
Conductivity	2.76 mS/cm @ 25°C	2.76 mS/cm		362912	☑
Dissolved Oxygen	Sodium Sulphite / Air	0.0% in Sodium Sulphite	% Saturation in Air	5928	☑
ORP	240mV @ 25°C	240mV	-	7035	☑

Battery Status 80 %	Temperature 21 °C
	Electrodes Cleaned and Checked

Note: Calibration solution traceability information is available upon request.

Please clean/decontaminate instrument and accessories before returning. A minimum 'Cleaning Fee' $55.00 (Inc GST) may apply if instrument is returned contaminated.

Checked By: [redacted] Date: 25/3/22 Signed: [redacted]

Accessories List:

User's Manual & USB	pH Sensor	Conductivity Sensor
Dissolved Oxygen Sensor with Wetting Cap	Redox (ORP) Sensor with Wetting Cap	Flow Cell 500ml
Comm Cable	Testing Cap	Storage Cap

EQUIPMENT CERTIFICATION REPORT

KENNARDS HIRE

PGN9003842-9003846 - INTERFACE METER

Plant Number: 235206

Probe Length: 100 m

ITEM	TEST	PASS	COMMENTS
Battery	Compartment / Capacity	☑	9v
Probe	Clean / Operation	☑	
Earth Lead	Check if equipped	☑	
Tape Check	Cleaned / Checked for cuts	☑	
Function test	At surface level	☑	

Note: Calibration traceability information is available upon request.

Please clean/decontaminate instrument and accessories before returning. A minimum 'Cleaning Fee' $55.00 (Inc GST) may apply if instrument is returned contaminated.

Checked By [redacted]

Accessories List:

Interface Meter	Tape Guide	Decon 90 Solution
Brush	Spare 9v Battery	Instruction Manual
Transport Box		

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	AMB OMP	**Project Number:**	60612563
Project Location:	Amberley	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Kennards Hire
Make and Model:	YSI Pro Quatro
Serial Number:	21H104238

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	29/3/22 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:	4	7.01	2760	0	232.3
Bump Test Reading:	4.05	6.96	2788	0.01	234.9
Bump Test Temperature:	23.4	23.5	23.6	23.6	23.5

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] 29/03/2022

Fieldwork Staff Signature **Date**

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	AMB OMP	**Project Number:**	60612563
Project Location:	Amberley	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Kennards Hire
Make and Model:	YSI Pro Quatro
Serial Number:	21H104238

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	30/3/22 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:	4	7.01	2760	0	230.1
Bump Test Reading:	4.01	6.99	2777	0	233.2
Bump Test Temperature:	24.4	24.4	24.4	24.5	24.5

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] 24/02/2021

Fieldwork Staff Signature **Date**

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	AMB OMP	**Project Number:**	60612563
Project Location:	Amberley	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Kennards Hire
Make and Model:	YSI Pro Quatro
Serial Number:	21H104238

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	31/3/22 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:	4	7.01	2760	0	231.2
Bump Test Reading:	3.99	6.98	2754	0	235.4
Bump Test Temperature:	23.8	23.8	23.8	23.9	24

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] 25/02/2021

Fieldwork Staff Signature **Date**

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	AMB OMP	**Project Number:**	60612563
Project Location:	Amberley	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Kennards Hire
Make and Model:	YSI Pro Quatro
Serial Number:	21H104238

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	01/04/22 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:	4	7.01	2760	0	229
Bump Test Reading:	4.03	7.03	2783	0	227.6
Bump Test Temperature:	24.7	25	25	25	25

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] 26/02/2021

Fieldwork Staff Signature **Date**

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	AMB OMP	**Project Number:**	60612563
Project Location:	Amberley	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Kennards Hire
Make and Model:	YSI Pro Quatro
Serial Number:	21H104238

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	4/4/22 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:	4	7.01	2760	0	231
Bump Test Reading:	4.02	6.97	2792	0.01	233.2
Bump Test Temperature:	23.8	23.9	23.8	23.6	23.8

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] 27/02/2021

Fieldwork Staff Signature **Date**

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	AMB OMP	**Project Number:**	60612563
Project Location:	Amberley	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Kennards Hire
Make and Model:	YSI Pro Quatro
Serial Number:	21H104238

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	05/4/22 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:	4	7.01	2760	0	232.4
Bump Test Reading:	4	6.98	2768	0	235.1
Bump Test Temperature:	22.9	22.8	22.4	22.8	23

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] 28/02/2021

Fieldwork Staff Signature **Date**

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	AMB OMP	**Project Number:**	60612563
Project Location:	Amberley	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Kennards Hire
Make and Model:	YSI Pro Quatro
Serial Number:	21H104238

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	06/4/22 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:	4	7.01	2760	0	234.5
Bump Test Reading:	4.02	6.99	2744	0	235.7
Bump Test Temperature:	22.5	22.4	22.5	22.7	22.5

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] 1/03/2021

Fieldwork Staff Signature **Date**

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	AMB OMP	**Project Number:**	60612563
Project Location:	Amberley	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Kennards Hire
Make and Model:	YSI Pro Quatro
Serial Number:	21H104238

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	07/4/22 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:	4	7.01	2760	0	232.3
Bump Test Reading:	4.02	6.99	2756	0	234.1
Bump Test Temperature:	23.2	23.3	23.2	23.3	23.4

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] 3/03/2021

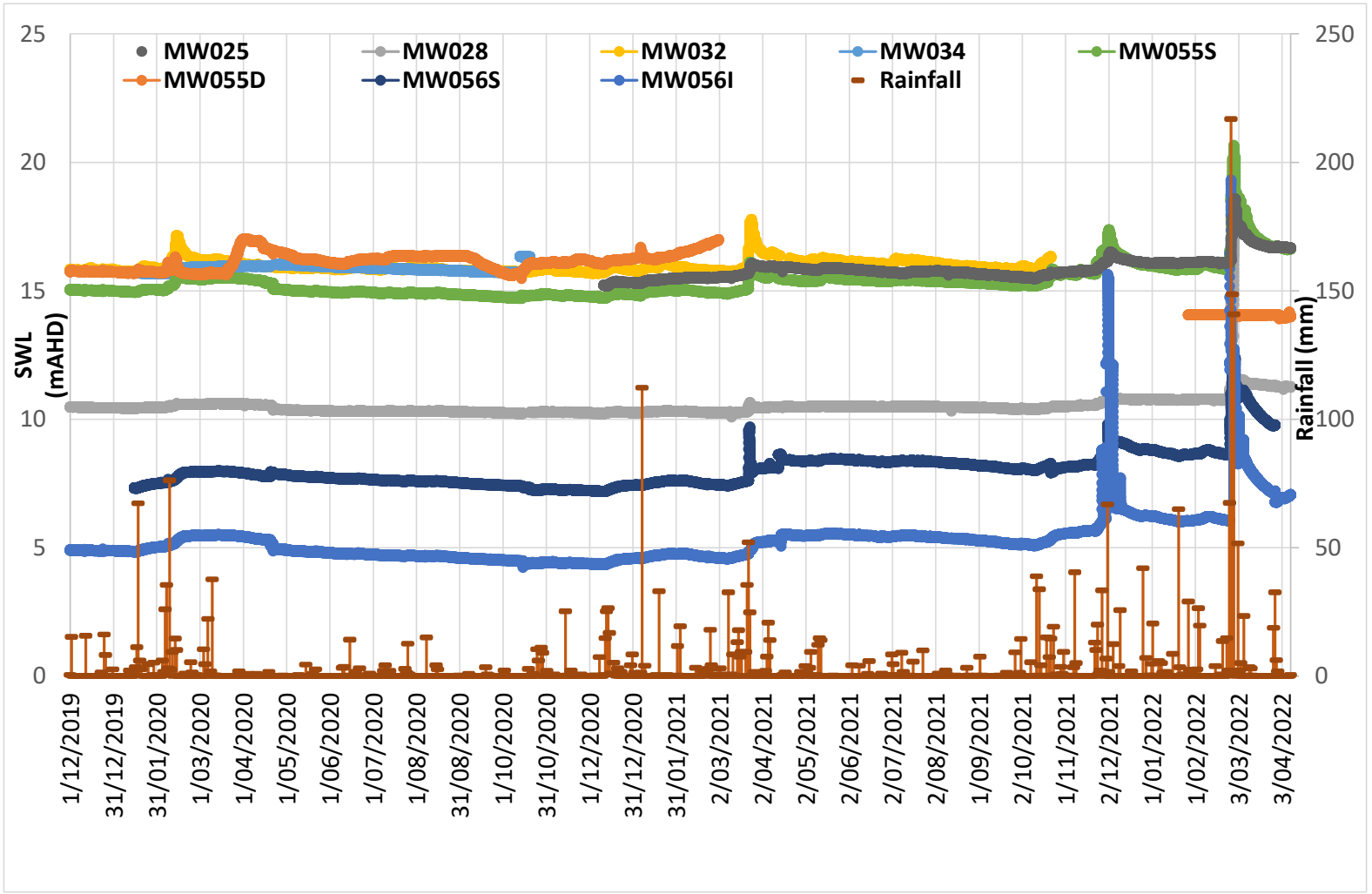
Fieldwork Staff Signature **Date**

Distribution: Project Central File

Appendix G

Groundwater Level Data

Chart G1 Groundwater Elevations and Rainfall December 2019 to April 2022



Prepared for
Department of Defence
ABN: 68706814312

AECOM

Sampling Event Factual Report, October / November 2022

PFAS OMP - RAAF Base Amberley

27-Oct-2023
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Sampling Event Factual Report, October / November 2022

PFAS OMP - RAAF Base Amberley

Client: Department of Defence

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			Name/Position	Signature
0	25-Nov-2022	Draft	[redacted] Project Manager	
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3	27-Oct-2023	Final	[redacted] Project Manager	[redacted]

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Abbreviations

Abbreviation	
ALS	Australian Laboratory Services
ASC NEPM	Assessment of Site Contamination National Environment Protection Measure 1999 (as amended 2013)
COC	Chain of custody
CPSA	Confirmed primary source area
DCMM	Defence Contamination Management Manual
Defence	Department of Defence
DO	Dissolved oxygen
EC	Electrical conductivity
FTA	Firefighting training area
HEPA	Heads of Environmental Protection Agencies
IP	Interface probe
LNAPL	Light non aqueous phase liquid
LOR	Limit of reporting
NATA	National Association of Testing Authorities
NEMP	National Environmental Management Plan
NHMRC	National Health and Medical Research Council
NMI	National Measurement Institute
OMP	Ongoing management plan
ORP	Oxidation reduction potential
PFAS	Per- and poly-fluorinated alkyl substances
PFHxS	Perfluorohexane sulfonate
PFOA	Perflurooctanoic acid
PFOS	Perflurooctanesulfonic acid
PMAP	PFAS management area plan
QA/QC	Quality assurance / quality control
RAAF	Royal Australian Air Force
QLD	Queensland
RPD	Relative percent difference
SAQP	Sampling analysis and quality plan
SWL	Standing water level

Units of Measurement			
L	Litres	m	Metre
mg	Milligram	ha	Hectares
kg	Kilogram	S	Siemens
mV	Millivolts	cm	Centimetre
µg	Microgram	mbtoc	Metres below top of casing
mAHD	Metres Australian height datum		

1.0 Introduction

1.1 General

AECOM Australia Pty Ltd (AECOM) has been engaged by the Department of Defence (Defence) to implement the per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Program (OMP) (Defence, 2020) at the Royal Australian Air Force (RAAF) Base Amberley (the 'Base') and the Management Area in the South Queensland Region. The locations of the Base and Management Area are shown on **Figure 1** in **Appendix A**.

The OMP for RAAF Base Amberley (Defence, 2020) includes the following sampling events:

- Biannual groundwater, surface water and sediment sampling in April and October in 2020, 2021, and 2022.

Following each biannual sampling event, sampling event factual reports will be prepared. Annual interpretive reports will be prepared following the completion of each 12-month sampling period. This sampling event factual report has been prepared to report the results of the biannual sampling event completed in October / November 2022[1], specifically highlighting first-time detections and/or new exceedances of human health screening criteria for perfluorohexane sulfonate (PFHxS) + perflurooctanesulfonic acid (PFOS) and / or perflurooctanoic acid (PFOA).

This report has been prepared in accordance with the *PFAS OMP Factual Reports Guidance,* v 0.2, May 2021 (Defence, 2021).

1.2 Objectives

The objectives of the OMP are to:

- Implement the OMP prepared as part of the PFAS Management Area Plan (PMAP); and
- Collect data that will enable Defence to maintain an up to date understanding of the distribution, concentration and transport of PFAS at RAAF Base Amberley.

The data will assist in the timely identification of risks and inform Defence's approach to the management of PFAS, including updates and revisions to the PMAP.

The objective of this phase of works was to implement the scope of works for the October/November 2022 sampling event in accordance with the sampling analysis and quality plan (SAQP) (AECOM, 2022a).

[1] Due to heavy rainfall in October 2022, some locations were not accessible during the sampling event. A follow-up visit was conducted on 9 November 2022 to complete the sampling event. This sampling event is therefore referred to as October/November 2022.

2.0 Scope of Work

The sampling event at RAAF Base Amberley was completed in general accordance with the SAQP (AECOM, 2022a). In summary, the scope of works for this sampling event included:

- Obtaining access to private properties where some groundwater sampling locations are situated.
- Review of the SAQP prior to the monitoring event to ensure compliance with the following:
  - PFAS National Environmental Management Plan (NEMP) V2.0 (HEPA, 2020);
  - National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, as amended in 2013 (ASC NEPM, 2013);
  - Defence Routine Environment Water Quality Monitoring Manual, 2018;
  - Defence, Contamination Management Manual, 2018 amended 2021;
  - AS/NZ 5667:1998 Water quality – Sampling (Standards Australia 1998);
  - Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018);
  - Relevant State regulatory guidelines.
- Gauging of groundwater elevation in 38 of 40 monitoring wells prior to collection of samples (refer to **Table 1** below, and **Figure 2** in **Appendix A** for specific locations). Two off-Base monitoring wells (MW056S and MW056I) were not accessible and could not be gauged, refer to **Table 8** for more details.
- Collection of groundwater samples at 38 of 40 locations including 34 on-Base monitoring wells and four off-Base monitoring well locations. Details are included in **Table 1** below and **Figure 2** in **Appendix A**. Two off-Base monitoring wells (MW056S and MW056I) were not accessible and could not be sampled, refer to **Table 8** for more details.
- Collection of co-located surface water and sediment samples at 45 of 49 locations, including 38 on-Base locations, and seven off-Base locations (refer below to **Table 2** and **Table 3** and **Figure 3** in **Appendix A**). Three surface water/sediment sampling locations (SD/SW011, SD/SW050 and SD/SW076) could not be collected during this sampling event. In addition, one sediment sample (SD009) and one surface water sample (SW028) were collected but not analysed. Refer to **Table 8** for more details.
- Downloading groundwater level data from data loggers installed in seven groundwater monitoring wells (MW025, MW028, MW032, MW055S, MW055D, MW056S, MW056I), refer to **Figure 2** in **Appendix A** for data logger locations. Dataloggers from two monitoring wells, MW056S and MW056I could not be downloaded due to access constraints, refer to **Table 8** for more details.
- Collection of intra- and inter- laboratory duplicate samples at a rate of 1 in 10 primary samples, one field blank sample per day, one rinsate sample per fieldwork day and one trip blank per batch.
- Analysis of all samples for the PFAS suite at the standard limit of reporting (LOR).
- Data management of all OMP field and laboratory data in the Defence ESdat database.
- Preparation of results letters for off-Base stakeholders.
- Preparation of this Sampling Event Factual Report.

Table 1 Groundwater Sampling Locations

Location		Monitoring Wells
Source Areas	Former Topside Aviation Fire Training Area (FTA) and current FTA Fire Pad (Confirmed Primary Source Area [CPSA] A)	MW002, MW033
	B Hangar 410 and Former Landfill	MW047
	Frogs Hollow Former Fire Training School Location (CPSA B)	MW037
	Sewage Treatment Plant (CPSA D)	MW021, MW032
	Historical Containment Pond (CPSA E)	MW048
	Former Fire Training Area and Operational Testing Area (CPSA G)	MW050
	Former Fire Training Area and Operational Testing Area (CPSA J)	MW005
	Potential Former Fire Training Area and Operations Test Area (CPSA L)	MW006, MW023, MW028, MW029, MW036
	Former Fuel Farm 1 and Triple Interceptor Pit (CPSA M)	MW309
	Potential Location of Aircraft F-4E Incident (CPSA T)	MW035
	AFFF Wastewater Holding Tank (CPSA V)	MW046
	Fire Fighting Training School (CPSA W)	MW026, MW030, MW031, MW042, MW043
	Former Structural and Open Pit Fire Training Area and Former Secondary Fire Training Area (CPSA X and Y)	MW041
	Fuel UST with AFFF listing (CPSA Z)	MW020
	Triple Interceptor Pits at Engine Test Cell Facilities 1 and 2 (CPSA AA)	MW007
	Areas used for irrigation – former grassed runways (CPSA BB)	MW012
	Former Landfill (CPSA CC)	MW022
	Former Fire Training Area on Disused Runway (CPSA DD)	MW049
Off-Base Warrill Creek		*MW054S, MW054D,* MW057S, MW057I
On-Base Bremer River		MW024, MW025, MW034, MW044, MW055S, MW055D
Off-Base Bremer River		MW056S, MW056I

Note: *Italics* indicates that the well is located on private property.
Wells with S, D or I are adjacent monitoring wells that are screened in different aquifers. 'S' indicates the well is screened in the shallow aquifer, 'D' or 'I' indicates the well is screened in the deeper aquifer. MW056I and MW057I were previously known as MW056D and MW057D.
MW002 was formerly known as MW2.

Table 2 Surface Water Sampling Locations

Area	Surface Water Sampling Locations	Number of Locations
On-Base Drains	SW002, SW003, SW008, SW011, SW021, SW027, SW028, SW030, SW033, SW037, SW038, SW041, SW048, SW049, SW053, SW056, SW059, SW064, SW067, SW076, SW079, SW080	22
Warrill Creek	SW004, SW005, SW009, SW015, SW016, SW018, SW020, SW026*, SW034, SW043*, SW099, SW100	12
Bremer River	SW025*, SW036, SW039*, SW040*, SW045*, SW047, SW050, SW051, SW052, SW088, SW089, SW090, SW091, SW094, SW098*	15

Note: * denotes off-Base sampling location.

Table 3 Sediment Sampling Locations

Area	Sediment Sampling Locations	Number of Locations
On-Base Drains	SD002, SD003, SD008, SD011, SD021, SD027, SD028, SD030, SD033, SD037, SD038, SD041, SD048, SD049, SD053, SD056, SD059, SD079, SD064, SD067, SD076, SD080	22
Warrill Creek	SD004, SD005, SD009, SD015, SD016, SD018, SD020, SD026*, SD034, SD043*, SD099, SD100	12
Bremer River	SD025*, SD036, SD039*, SD040*, SD045*, SD047, SD050, SD051, SD052, SD088, SD089, SD090, SD091, SD094, SD098*	15

Note: * denotes off-Base sampling location.

3.0 Methodology

The methodology used for the October/November 2022 sampling event was in accordance with the SAQP (AECOM, 2022a) and is summarised below. Deviations from the SAQP are discussed in **Section 3.6**.

3.1 Groundwater Sampling Methodology

The groundwater sampling methodology is outlined in **Table 4** below.

Table 4 Groundwater Sampling Methodology

Item	Details
Groundwater gauging	The depth to groundwater was measured in each monitoring well using an interface probe prior to the installation of HydraSleeves™, or if HydraSleeves™ were already installed, prior to retrieval of the HydraSleeve™. Where water level transducers were installed, the well was gauged prior to the removal of the water level transducer. Gauging was conducted in as short a time as possible, however, due to the number of wells and different requirements for accessing the monitoring well locations, the gauging took place over several days. Water level transducers are installed in seven monitoring wells to continuously record groundwater levels (MW025, MW028, MW032, MW055S, MW055D, MW056S, MW056I). A barometric logger is installed in MW028. Data collected since the previous OMP sampling event in March 2022 were downloaded from MW025, MW028, MW055S and MW055D. Monitoring wells MW056S and MW056I could not be accessed so the data were not downloaded. The water level transducer in MW032 was not functioning in March 2022 and was replaced in June 2022. Data collected since June 2022 was downloaded.
Field parameters	Temperature, electrical conductivity (EC), dissolved oxygen (DO), oxidation-reduction potential (ORP), pH and observations of water quality were recorded for all groundwater samples. Field parameters were obtained before sampling, ex situ. The probe on the water quality meter was decontaminated prior to being placed in the water sample.
Sampling methodology	Groundwater samples were collected from the monitoring wells using no-purge methodology HydraSleeves™, which were installed within the screened interval of each well (based on a review of the well construction log) for a minimum of 24 hours prior to the sampling round. Once sampling was completed, new HydraSleeves™ were deployed at the screened interval depth in 17 of the monitoring wells in preparation for the next sampling round. HydraSleeves™ were not installed in 21 monitoring wells as they are regularly used for monitoring on other programs.
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), field blanks, rinsate samples and trip blanks. Refer to **Appendix C** for assessment of QA/QC sample data. Equipment calibration certificates are presented in **Appendix F**.
Sample analysis	All primary samples were submitted for analysis for the PFAS suite using the standard LOR. ALS Environmental (ALS) Brisbane, Queensland was used as the primary laboratory. The National Measurement Institute (NMI) of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for groundwater analyses are certified by the National Association of Testing Authorities (NATA). Chain of custody (COC) forms are presented in **Appendix D**, laboratory analytical certificates are presented in **Appendix E**.

3.2 Surface Water Sampling Methodology

The methodology used for the October / November 2022 sampling event was in accordance with the SAQP (AECOM, 2022a) and is summarised in **Table 5** below.

Table 5 Surface Water Sampling Methodology

Item	Details
Field parameters	Temperature, EC, DO, ORP, pH and observations of water quality were recorded for all surface water samples.
Sample Collection Methodology	Samples were collected from immediately below the water surface to minimise collection of sediment or floating materials in the samples. At each location, a new, laboratory supplied container was lowered into the water with the cap immediately applied once the container was full.
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), field blanks, rinsate samples and trip blanks. Refer to **Appendix C** for assessment of QA/QC sample data. Equipment calibration certificates are presented in **Appendix F**.
Sample analysis	All primary samples were submitted for PFAS suite using the standard LOR. ALS Brisbane, Queensland was used as the primary laboratory. NMI of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for surface water analyses were certified by the NATA. COC forms are presented in **Appendix D**, laboratory analytical certificates are presented in **Appendix E**.

3.3 Sediment Sampling Methodology

The methodology used for the October/November 2022 sampling event was in accordance with the SAQP (AECOM, 2022a) and is summarised in **Table 6** below.

Table 6 Sediment Sampling Methodology

Item	Details
Sample Collection Methodology	Samples representative of potentially deposited sediments were collected from within the water body where possible. Sediment samples were collected by hand using new laboratory supplied nitrile gloves and a new laboratory supplied container at each location.
Logging	Sediment characterisation details were recorded for each sample.
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), field blanks, rinsate samples and trip blanks. Refer to **Appendix C** for assessment of QA/QC sample data. Equipment calibration certificates are presented in **Appendix F**.
Sample analysis	All primary samples were submitted for PFAS suite using the standard LOR. ALS Brisbane, Queensland was used as the primary laboratory. NMI of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for sediment analyses were certified by the NATA. COC forms are presented in **Appendix D**, laboratory analytical certificates are presented in **Appendix E**.

3.4 Adopted Screening Criteria

Adopted screening criteria references national guidance in the form of the PFAS National Environmental Management Plan, Defence estate and environmental strategies, and Defence PFAS-specific strategies and guidance. Guidance documents used to assess the dataset includes the following:

- PFAS NEMP, V2.0 (HEPA, 2020);
- Department of Health, 2019. *Health Based Guidance Values for PFAS for use in site investigations in Australia,* September 2019;
- National Health and Medical Research Council (NHMRC), 2019. *Guidance on PFAS in Recreational Water*, August 2019 (NHMRC, 2019);
- *National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, as amended in 2013* (ASC NEPM, 2013).

In accordance with the OMP (Defence, 2020) and SAQP (AECOM, 2022a), the adopted PFAS screening criteria to assess the data generated as part of the OMP are presented in **Table 7** below.

Table 7 Summary of Adopted Screening Criteria

Pathway	Compound	Criteria	Comment / Reference
Human Health Receptors			
Drinking water – groundwater	PFOS + PFHxS	0.07 µg/L	The values are from the PFAS NEMP (HEPA, 2020). *All groundwater results will be compared to these criteria.*
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	The values presented are from the PFAS NEMP (HEPA, 2020), which are sourced from NHMRC (2019). *All surface water results will be compared to these criteria.*
	PFOA	10 µg/L	
Ecological Receptors			
Freshwater (95% species protection values)	PFOS	0.13 µg/L	*The values are from the PFAS NEMP* (HEPA, 2020). *All surface water and groundwater results will be compared to these criteria.*
	PFOA	220 µg/L	
Freshwater (99% species protection values)	PFOS	0.00023 µg/L	
	PFOA	19 µg/L	

There are no current HEPA (2020) endorsed human health or ecological guideline values available for PFAS in sediment.

3.5 Data Quality Objectives and Data Validation

The data quality objectives and data quality indicators adopted for these works are presented in the SAQP (AECOM, 2022a).

Data validation assessment is provided in **Appendix C**. Data validation procedure employed in the assessment of the field and laboratory QA/QC data indicated that the reported analytical results are

representative of the sample locations and that the overall quality of the analytical data produced is acceptably reliable for the purpose of this report.

All data collected during this event has been reviewed and uploaded to the Defence ESdat database in accordance with Defence Contamination Management Manual (Defence, 2018) Annex L Guidance on Data Management (amended 2021) requirements.

3.6 Deviations from the SAQP

Table 8 lists the deviations from the SAQP (AECOM, 2022a) during this sampling event. The deviations are considered to be of low significance and have a minimal impact on the sampling event results.

Table 8 Deviations from the SAQP during Sampling Event for October/November 2022

SAQP	October/November 2022 Sampling Event	Impact on OMP Program
Collection of groundwater samples at 40 locations	• MW056S and MW056I could not be sampled as the wells could not be found due to the presence of heavy vegetation.	• The non-sampling of MW056S and MW056I reduced the spatial coverage of the groundwater monitoring network to the east of the Base.
Installation of Hydrasleeves™ at target depths in monitoring wells	• The Hydrasleeve™ installed in monitoring well MW023 was installed at 8.7 mbtoc, compared to the target depth of 11.0 mbtoc, as identified in the SAQP.	• As the Hydrasleeve™ was installed in the screened section of the well, there is not likely to be an impact on the quality of the data and OMP program.
Collection of surface water samples at 49 locations	Three surface water samples were not collected: • SW011 and SW076 could not be collected as they were present in construction zones. • SW050- not accessible due to site conditions. Additionally, SW028 was collected and transferred to the laboratory, however, subsequently, the sample bottles could not be found.	• The non-sampling of SW011 and SW076 means there are no data available to evaluate PFAS concentrations at these drain locations. The non-sampling of SW050, which is located along the Bremer River, and non-analysis of SW028 (located along the Warrill Creek) is of lower significance as there are data available from sampling locations further downstream.
Download of data from seven data loggers	• Dataloggers from MW056S and MW056I could not be retrieved as the wells could not be found due to the presence of heavy vegetation. Data from all other locations were downloaded. • During the sampling event in April 2022, the datalogger in MW032 was found to be not functioning. The datalogger was replaced in June 2022.	• Dataloggers at MW056S and MW056I will be downloaded during the next sampling event. The non-retrieval of the data during this event delays the evaluation of groundwater elevations. • Groundwater level data in MW032 were not available for the period April to June 2022. As groundwater level data were not available, this reduces the understanding of groundwater level changes in 2022 at this portion of the Base near the Warrill Creek.

SAQP	October/November 2022 Sampling Event	Impact on OMP Program
Collection of sediment samples from 49 locations	Three sediment samples were not collected: • SD011 and SD076 could not be collected as they were present in construction zones. • SD050- not accessible due to site conditions. Additionally, SD009 was collected and transferred to the laboratory, however, subsequently, the sample bottles could not be found.	• The non-sampling of these sediment samples means there are no data available to evaluate PFAS concentrations at these drain/creek locations. The non-sampling is of low significance as there are data available at sampling locations further downstream.
LOR for water samples	• Due to matrix interference during the analysis of the groundwater sample from MW044, the LOR were raised for sum of PFHxS and PFOS above the drinking water guideline value and PFOS above the ecological 95% freshwater species protection guideline value	• No impact to OMP program. Duplicate and triplicate samples were also collected from MW044. The triplicate sample, analysed at NMI was not affected by matrix interference and consequently the triplicate results have been used for assessment purposes in this report.
Collection of samples during a single sampling event	• Due to the wet conditions during October 2022, five groundwater samples (MW022, MW034, MW035, MW054S, MW054D) could not be collected and were collected approximately two weeks later in November 2022.	• The delay of two weeks in sampling five of the wells is considered to be a relatively short period and is unlikely to impact the OMP program.

4.0 Field Observations and Results

The October/November 2022 sampling event was completed between 18 October and 9 November 2022. The results are summarised in following sections.

4.1 Groundwater

4.1.1 Groundwater Observations and Field Measurements

Table 9 Groundwater Observations and Field Measurements

Item	Details
Access	All monitoring wells were accessible with the except of MW056S and MW056I which were not found due to heavy vegetation.
Monitoring Well Network	No issues were identified in 37 monitoring wells sampled. The gatic for MW042, located at the fire school, has been damaged due to ground movement.
Field Observations	Groundwater from one monitoring well had a sulfur odour (MW34). Groundwater from two monitoring wells had a hydrocarbon odour (MW041 and MW042). No other visible or olfactory indications of contamination were observed during the sampling of the other monitoring wells. Field observations are presented in **Table T1** in **Appendix B**.
Depth to Groundwater	Depth to groundwater in the Alluvium was between 2.52 and 15.01 metres below top of casing (mbtoc). Depth to groundwater in the Tertiary Formation was between 5.52 and 16.08 mbtoc. Depth to groundwater in the Walloon Coal Measures was between 5.24 and 24.07 mbtoc. Groundwater elevation in the Alluvium was between 9.77 and 18.20 metres above Australian height datum (mAHD). Groundwater elevation in the Tertiary Formation was between 10.97 and 28.98 mAHD. Groundwater elevation in the Walloon Coal Measures was between 14.31 and 39.62 mAHD. Groundwater gauging data are presented in **Table T1** in **Appendix B**. Water level transducer results for five monitoring wells are presented in **Appendix G**.
Groundwater Flow Direction	Inferred groundwater contours and groundwater flow directions at the Base in October/November 2022 for the Alluvium/Tertiary Formation are shown on **Figure 4** in **Appendix A**. The inferred local groundwater flow direction is towards the northeast and east in the direction of the Bremer River and Warrill Creek. The inferred flow direction is consistent with previous sampling events (AECOM, 2022b). Inferred groundwater contours and groundwater flow directions at the Base in October/November 2022 for the Walloon Coal Measures are shown on **Figure 4** in **Appendix A**. The inferred local groundwater flow direction is towards the northeast and east in the direction of the Bremer River and Warrill Creek. The inferred flow direction is consistent with previous sampling events (AECOM, 2022b).

<table>
<tr><th>Item</th><th>Details</th></tr>
<tr><td>Groundwater Quality Parameter Field Measurements</td><td>Groundwater quality parameters were measured prior to collecting groundwater samples. The readings are presented in Table T1 in Appendix B and are summarised per geological unit in the table below:
<table>
<tr><th>Unit</th><th>Parameter</th><th>Min</th><th>Max</th><th>Comment</th></tr>
<tr><td rowspan="4">Alluvium</td><td>DO (mg/L)</td><td>0.03</td><td>5.37</td><td>Poorly to well oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>317</td><td>8583</td><td>Fresh to brackish</td></tr>
<tr><td>pH</td><td>6.01</td><td>7.55</td><td>Near neutral</td></tr>
<tr><td>ORP (mV)</td><td>110.7</td><td>380.7</td><td>Mildly to moderately reducing</td></tr>
<tr><td>Temperature (°C)</td><td>21.40</td><td>26.10</td><td>-</td></tr>
<tr><td rowspan="4">Tertiary Formation</td><td>DO (mg/L)</td><td>0.01</td><td>3.98</td><td>Poor to moderately oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>513</td><td>27,834</td><td>Fresh to saline</td></tr>
<tr><td>pH</td><td>6.20</td><td>6.95</td><td>Near neutral</td></tr>
<tr><td>ORP (mV)</td><td>122.0</td><td>182.1</td><td>Mildly to moderately reducing</td></tr>
<tr><td>Temperature (°C)</td><td>22.30</td><td>28.80</td><td>-</td></tr>
<tr><td rowspan="5">Walloon Coal Measures</td><td>DO (mg/L)</td><td>0</td><td>2.97</td><td>Poorly to moderately oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>561</td><td>24,823</td><td>Fresh to saline</td></tr>
<tr><td>pH</td><td>5.8</td><td>7.0</td><td>Slightly acidic to neutral</td></tr>
<tr><td>ORP (mV)</td><td>-44.9</td><td>218.3</td><td>Mildly to strongly reducing</td></tr>
<tr><td>Temperature (°C)</td><td>22.1</td><td>25.4</td><td>-</td></tr>
</table>
The measured parameter ranges are consistent with previous sampling event results (AECOM 2022b).</td></tr>
<tr><td>Weather Conditions</td><td>Weather conditions during groundwater sampling were hot (with maximum daily temperatures between 23.1 and 35.2°C) with rain during October to November. A total of 93.2 mm of rainfall was recorded during the sampling period from 18 October – 9 November 2022 (Bureau of Meteorology (BOM) station 040004 – ‘Amberley AMO).</td></tr>
<tr><td>Estate Management Works or Training Activities</td><td>During the sampling event no notable estate works or training activities were observed in the vicinity of sampling locations or are known to have taken place in the six months prior to the sampling event, which may have had a material impact upon the sampling event and analytical data.</td></tr>
</table>

4.1.2 Groundwater Analytical Results

The groundwater analytical results for PFAS from this sampling event are presented in **Table T2** in **Appendix B**. Concentrations of sum of PFHxS and PFOS in 23 of the 38 groundwater samples exceeded the drinking water guideline value with six samples exceeding the PFOA guideline.

PFAS were detected above the LOR in 27 of the 38 groundwater samples collected. A total of 25 samples were detected equal to or above the LOR and exceeded the ecological guideline for PFOS for 99% protection of ecosystems with 16 of these samples also exceeding the 95% protection guideline value. One groundwater sample (MW046) exceeded the PFOA ecological guideline for 99% protection of freshwater species, but this sample did not exceed the 95% protection guideline.

There were no first-time detections or new exceedances of the guidelines compared to the historical dataset. There were six new maximum sum of PFHxS and PFOS concentrations recorded in samples from MW025 (2.44 µg/L), MW029 (11.8 µg/L), MW030 (11.6 µg/L), MW047 (16.7 µg/L), MW054S (0.38 µg/L) and MW057S (2.57 µg/L). The concentration detected in MW057S exceeded the recreational water use guideline value for the first-time. There were four new maximum PFOA

concentrations recorded in the samples from MW025 (0.17 µg/L), MW030 (1.19 µg/L), MW047 (0.52 µg/L) and MW057S (0.11 µg/L).

4.2 Surface Water

4.2.1 Surface Water Observations and Field Measurements

Table 10 Surface Water Observations and Field Measurements

<table>
<tr><th>Item</th><th>Details</th></tr>
<tr><td>Access</td><td>All surface water sampling locations were accessed during the sampling event, with the exception of SW011, SW050 and SW076, which were not accessible.</td></tr>
<tr><td>Field Observations</td><td>No visual or olfactory indications of contamination were observed during the sampling of the other surface water sampling locations. Field observations are reported in Table T3, Appendix B.</td></tr>
<tr><td>Surface Water Quality Parameter Field Measurements</td><td>Surface water quality parameters were measured prior to collecting surface water samples. The readings are presented in Table T3 in Appendix B and are summarised below:
<table>
<tr><th>Unit</th><th>Parameter</th><th>Min</th><th>Max</th><th>Comment</th></tr>
<tr><td>Drain</td><td>DO (mg/L)</td><td>0.36</td><td>8.89</td><td>Poorly to well oxygenated</td></tr>
<tr><td></td><td>EC (µS/cm)</td><td>34</td><td>418</td><td>Fresh</td></tr>
<tr><td></td><td>pH</td><td>6.30</td><td>8.21</td><td>Near neutral to slightly alkaline</td></tr>
<tr><td></td><td>ORP (mV)</td><td>138</td><td>320</td><td>Mildly to moderately reducing</td></tr>
<tr><td></td><td>Temperature (°C)</td><td>20.0</td><td>32.6</td><td>-</td></tr>
<tr><td>Warrill Creek</td><td>DO (mg/L)</td><td>2.85</td><td>7.44</td><td>Mildly to well oxygenated</td></tr>
<tr><td></td><td>EC (µS/cm)</td><td>109.5</td><td>814</td><td>Fresh</td></tr>
<tr><td></td><td>pH</td><td>6.57</td><td>7.38</td><td>Near neutral</td></tr>
<tr><td></td><td>ORP (mV)</td><td>133.8</td><td>226.8</td><td>Moderately reducing</td></tr>
<tr><td></td><td>Temperature (°C)</td><td>20.0</td><td>26.3</td><td>-</td></tr>
<tr><td>Bremmer River</td><td>DO (mg/L)</td><td>1.41</td><td>8.02</td><td>Mildly to well oxygenated</td></tr>
<tr><td></td><td>EC (µS/cm)</td><td>93.7</td><td>796.1</td><td>Fresh</td></tr>
<tr><td></td><td>pH</td><td>6.94</td><td>7.95</td><td>Near neutral to slightly alkaline</td></tr>
<tr><td></td><td>ORP (mV)</td><td>179.9</td><td>232.1</td><td>Moderately reducing</td></tr>
<tr><td></td><td>Temperature (°C)</td><td>19.1</td><td>20.6</td><td>-</td></tr>
</table>
The measured parameter ranges are consistent with previous sampling event results (AECOM 2022b).</td></tr>
<tr><td>Weather Conditions</td><td>Weather conditions during surface water sampling were hot (with maximum daily temperatures between 23.1 and 35.2°C) with rain during October/November. A total of 93.2 mm of rainfall was recorded during the sampling period from 18 March – 9 November 2022 (Bureau of Meteorology (BOM) station 040004 – ‘Amberley AMO).</td></tr>
<tr><td>Estate Management Works or Training Activities</td><td>During the sampling event no notable estate works or training activities were observed in the vicinity of sampling locations or are known to have taken place in the six months prior to the sampling event, which may have had a material impact upon the sampling event and analytical data.</td></tr>
</table>

4.2.2 Surface Water Analytical Results

The analytical results for PFAS in surface water from this sampling event are presented in **Table T4** in **Appendix B**. There were no new exceedances of the adopted human health or ecological guidelines compared to the historical dataset. There was one first-time detection of PFOA (0.02 µg/L) in the

sample from SW026, which marginally exceeded the LOR (0.01 µg/L). There were no first-time detections of sum of PFHxS+PFOS in October / November 2022. First-time detections from the historical dataset are recorded in **Table 11** below. The location of SW026 is shown on **Figure 6** in **Appendix A**.

Table 11 First-time Detections or New Exceedances of Sum of PFHxS+PFOS or PFOA in Surface Water

First-time detection / exceedance	Surface water Sampling location	Sum of PFHxS+PFOS concentration (µg/L)		PFOA concentration (µg/L)	
		October / November 2022	Historical maximum	October / November 2022	Historical maximum
First-time detections or new exceedances of PFHxS+PFOS or PFOA in surface water	SW026	0.58	0.23	0.02	<0.01

Note: Yellow shading indicates a sample with a new exceedance above human health recreational water guideline values (refer to **Table 7**), blue indicates a first-time detection.

Concentrations of sum of PFHxS and PFOS in seven of the 45 surface water samples exceeded the recreational water guideline value (SW021, SW030, SW033, SW037, SW056, SW059, SW067) with none of the samples exceeding the PFOA guideline. A total of 30 samples exceeded the ecological guideline for PFOS for 99% protection of ecosystems with 24 of these samples also exceeding the 95% protection guideline value. None of the samples exceeded the PFOA ecological guidelines for either 95% or 99% protection of freshwater species.

Other than the new detection and new maximum concentration of PFOA in SW026 as described above, a new maximum sum of PFHxS and PFOS concentration was recorded in the sample from SW099 (0.12 µg/L).

4.3 Sediment

4.3.1 Sediment Observations and Field Measurements

Table 12 Sediment Observations

Item	Details
Access	All sediment sample locations were accessible, with the exception of SD011, SD050 and SD076.
Field Observations	Sediment logging data are presented in **Table T5** in **Appendix B**. No visible or olfactory indications of contamination were observed during sampling at the sediment sampling locations. Thirteen of the samples had an organic odour.
Weather Conditions	Weather conditions during sediment sampling were hot (with maximum daily temperatures between 23.1 and 35.2°C) with rain during October/November. A total of 93.2 mm of rainfall was recorded during the sampling period from 18 October – 9 November 2022 (Bureau of Meteorology (BOM) station 040004 – 'Amberley AMO).
Estate Management Works or Training Activities	During the sampling event no notable estate works or training activities were observed in the vicinity of sampling locations or are known to have taken place in the six months prior to the sampling event, which may have had a material impact upon the sampling event and analytical data.

4.3.2 Sediment Analytical Results

The analytical results for PFAS in sediment from this sampling event are presented in **Table T6** in **Appendix B**. There was one first-time detection from the historical dataset. This was in the sample from SD038 with PFOA reported at a concentration of 0.0005 mg/kg. New maximum sum of PFHxS and PFOS concentrations were recorded at SD020 (0.0133 mg/kg), SD028 (0.468 mg/kg), SD036 (0.01 mg/kg), SD038 (0.0229 mg/kg), SD059 (1.1 mg/kg), SD064 (0.313 mg/kg) , SD090 (0.0015 mg/kg). New maximum concentrations of PFOA were recorded at SD003 (0.0026 mg/kg), SD030 (0.0035 mg/kg), SD038 (0.0005 mg/kg) SD051 (0.0003 mg/kg), SD056 (0.0246 mg/kg)[2], SD059 (0.0156 mg/kg).

[2] This was in the duplicate sample, 0861_QC190_221021. The PFOA concentration in the primary sample, 0861_SD056_221021 was 0.191 mg/kg.

5.0 Summary and Next Sampling Event

5.1 Summary of Monitoring Event

A groundwater, surface water and sediment monitoring event was completed within the RAAF Base Amberley Management Area between 18 October and 9 November 2022. The program included sampling of groundwater from 40 monitoring wells and 49 co-located surface water and sediment sampling locations. A total of 38 monitoring wells, 45 of the surface water locations and 45 sediment locations were sampled and analysed.

Table 13 summarises the findings of the October / November 2022 sampling event and the recommended actions.

Table 13 Summary of Sampling Event

Item	Comment	Recommended Actions
Access to sampling locations	All groundwater sampling locations were accessible with the exception of MW056S and MW056I, due to the presence of heavy vegetation. All surface water and sediment samples were collected with the exception of SW/SD011, SW/SD050 and SW/SD076 as these locations were not accessible.	The off-Base location of MW056S/I is heavily vegetated and will need to mowed by the Council to allow access. The locations SW/SD011, SW/SD050 and SW/SD076 should be reinspected during the next sampling event in April 2023. Sampling of on-Base drains should continue to be timed to occur after a rainfall event.
Groundwater level loggers	Groundwater dataloggers could not be retrieved from MW056S and MW056I due to the presence of heavy vegetation.	The datalogger data from MW056S/I will be retrieved in the next sampling event.
Monitoring well network condition	No issues were identified in 37 of the 38 monitoring wells sampled. The gatic for MW042, located at the fire school, has been damaged due to ground movement and requires repairs.	The gatic cover for MW042 requires repair.
Analytical Results	Sum of PFHxS and PFOS or PFOA concentrations in 32 out of 38 groundwater samples were consistent with historical results. Six groundwater sampling locations reported new maximum concentrations or wither sum of PFHxS and PFOS or PFOA. Sum of PFHxS and PFOS or PFOA concentrations in 43 of 45 surface water samples collected were consistent with historical results. Two surface water sampling locations reported new maximum concentrations. Sum of PFHxS and PFOS or PFOA concentrations were consistent with historical results in 34 of the 45 sediment samples. Eleven sediment samples reported new	Ongoing monitoring in accordance with the OMP. A review of the OMP is being conducted during 2022 which will identify the sampling program after the October 2022 sampling event.

Item	Comment	Recommended Actions
	maximum concentrations for sum of PFHxS and PFOS or PFOA.	
First-time detections of Sum of PFHxS and PFOS or PFOA	No first-time detections of sum of PFHxS and PFOS or PFOA above the laboratory LOR were recorded in any of the groundwater, surface water (with one exception) or sediment samples (with one exception) collected. The exceptions were the surface water sample from SW026 and the sediment sample from SD038, which recorded first-time detections of PFOA. However, PFOS and PFHxS have been consistently detected at these monitoring locations.	Ongoing monitoring in accordance with the OMP.
New exceedance of NEMP guideline values	There were no new exceedances of the NEMP (HEPA, 2020) drinking water guideline values in groundwater. There was one new exceedance of the recreational water use guideline value for sum of PFHxS and PFOS in the sample from MW057S. There were no new exceedances of the ecological guideline value in groundwater or surface water samples.	Ongoing monitoring in accordance with the OMP.

5.2 Upcoming Sampling Events

The next biannual sampling event is scheduled for April 2023.

5.3 Upcoming Annual Interpretive Report

The next annual interpretive report is scheduled for March 2023.

6.0 References

AECOM, 2021, *Annual Interpretive Report, 2020 – PFAS OMP – RAAF Base Amberley,* Rev 2, November 2021.

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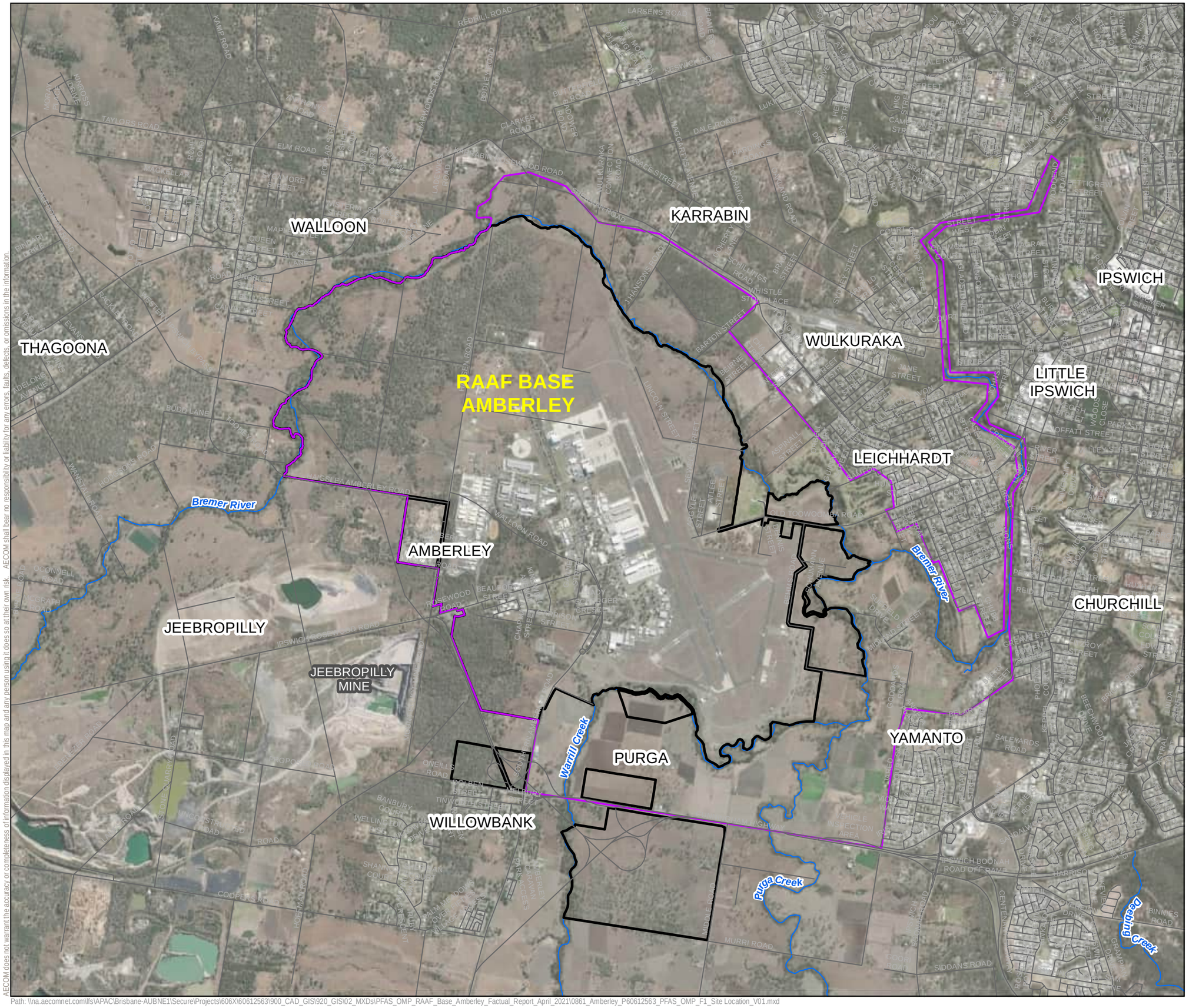
Appendix A

Figures

Appendix A Figures



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LEGEND

- Management Area
- Base Boundary
- Watercourses

km
0 0.5 1

AECOM

SCALE 1:38,000
SIZE A3
SHEET
COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE
Figure 1: RAAF BASE AMBERLEY LOCATION

PROJECT
PROJECT: PFAS OMP RAAF BASE AMBERLEY SAMPLING EVENT,
FACTUAL REPORT: October / November 2022

CLIENT
DEPARTMENT OF DEFENCE

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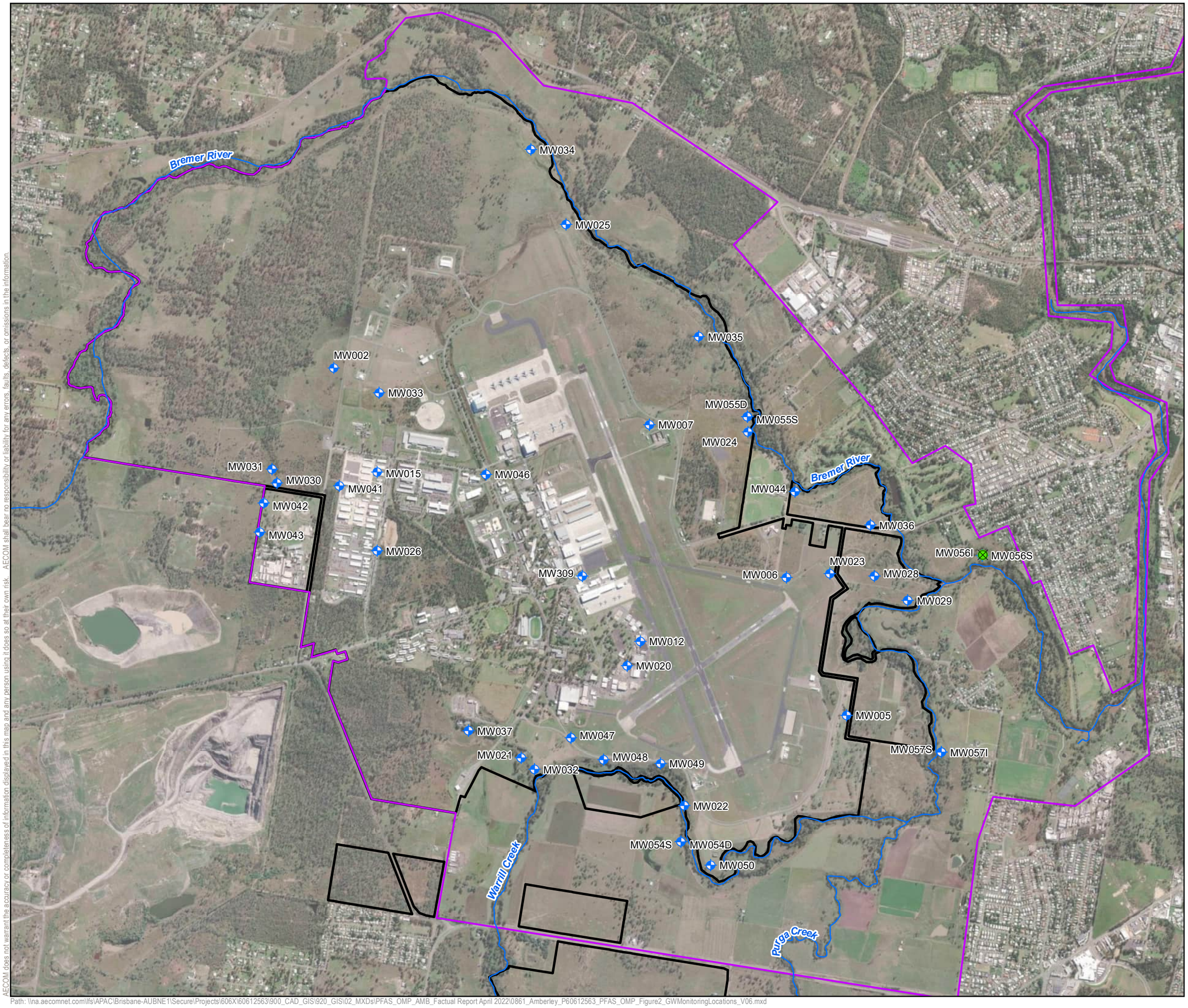

LEGEND

- Groundwater Monitoring Wells – sample collected
- Groundwater Monitoring Wells - samples not collected
- Management Area
- Base Boundary
- Watercourses

N

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET -

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 2: Groundwater Monitoring Wells

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT FACTUAL REPORT:
OCTOBER / NOVEMBER 2022

CLIENT

DEPARTMENT OF DEFENCE

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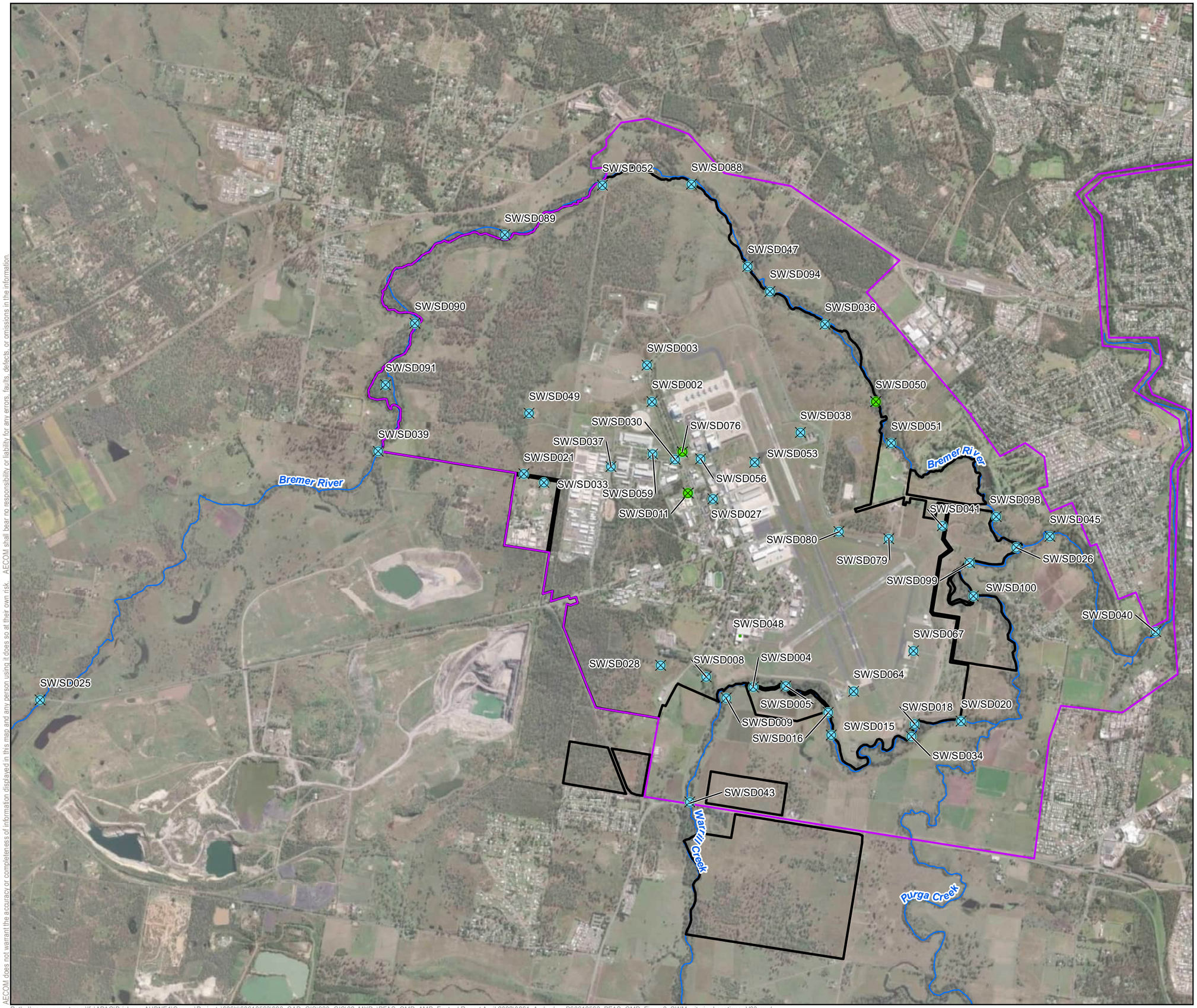

LEGEND

- Surface Water / Sediment Sample not collected
- Surface Water / Sediment Sample
- Management Area
- Base Boundary

N

0 0.5 1 km

AECOM

SCALE	SIZE
1:35,000	A3
SHEET	COORDINATE SYSTEM
	GDA 1994 MGA Zone 56

TITLE

Figure 3: Surface Water and Sediment Sampling Locations

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT,
FACTUAL REPORT: OCTOBER / NOVEMBER 2022

CLIENT

DEPARTMENT OF DEFENCE

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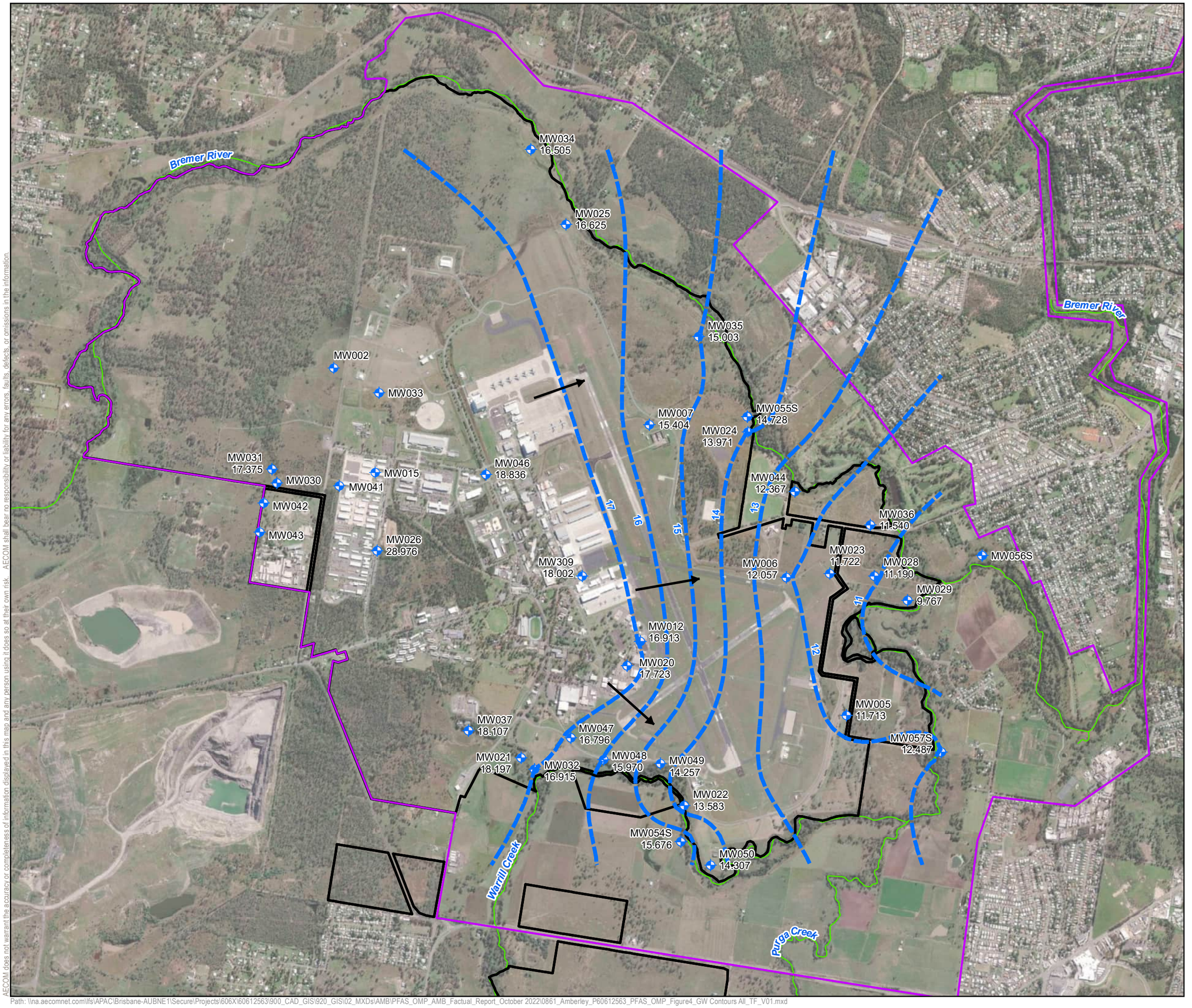

LEGEND

- Groundwater Monitoring Wells
- Management Area
- Base Boundary
- Groundwater Contours (mAHD)
- Groundwater flow direction
- Watercourses

N

0 0.5 1 km

AECOM

SCALE	1:26,000
SIZE	A3
SHEET	
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 4: Inferred Groundwater Contours in the Alluvium / Tertiary Formation -

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY SAMPLING EVENT,
FACTUAL REPORT: OCTOBER / NOVEMBER 2022

CLIENT

DEPARTMENT OF DEFENCE

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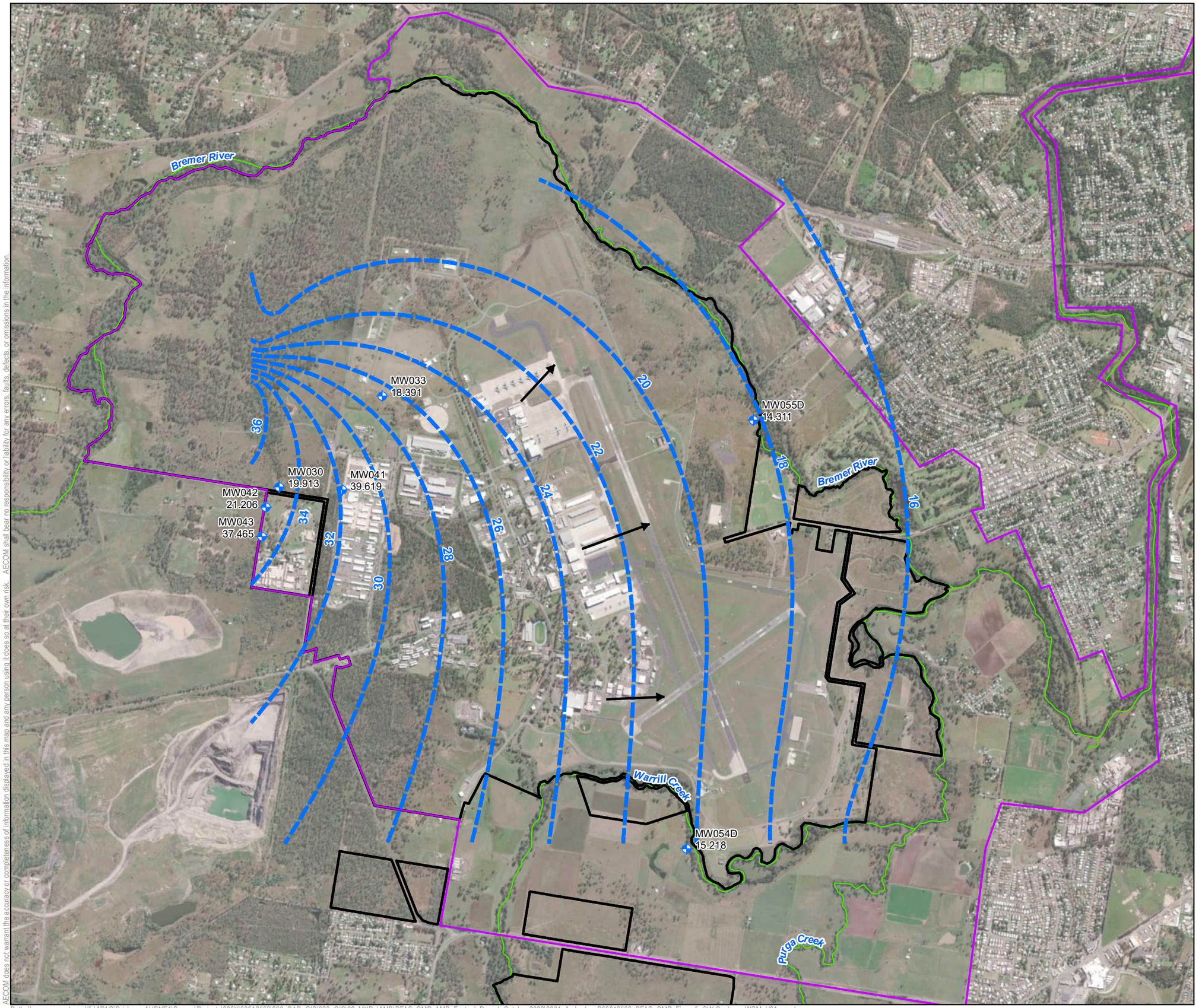

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LEGEND

- Management Area
- Base Boundary
- Groundwater Contours (mAHD)
- Groundwater flow direction
- Watercourses

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

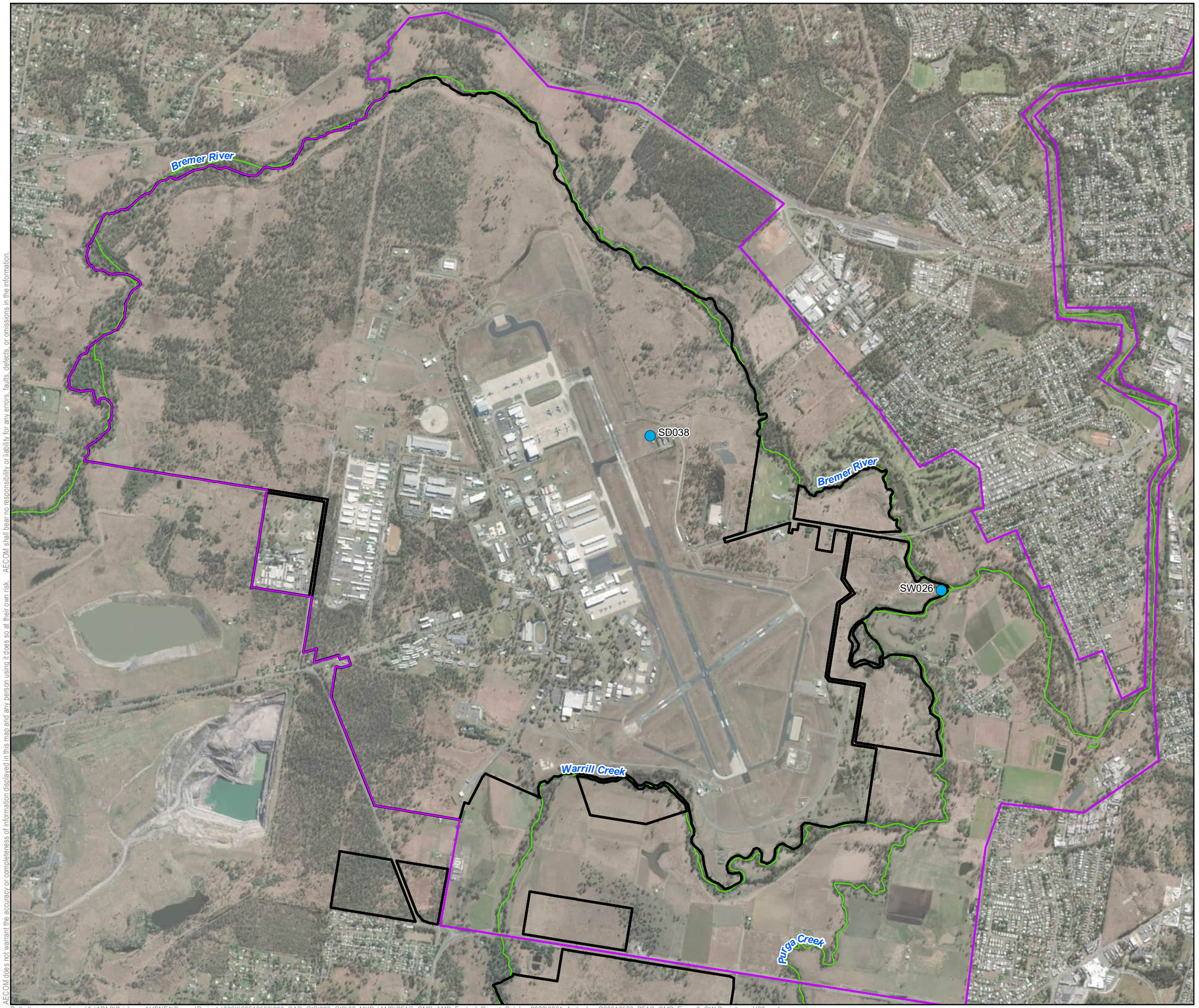
Figure 5: Inferred Groundwater Contours in the Walloon Coal Measures - October / November 2022

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT,
FACTUAL REPORT: OCTOBER / NOVEMBER 2022

CLIENT

DEPARTMENT OF DEFENCE



LEGEND

- Management Area
- Base Boundary
- Watercourses
- First time detection of PFHxS+PFOS or PFOA

N

0 0.5 1 km

AECOM

-

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 6: Surface Water and Sediment Results – Deviations from Historical Data – October / November 2022

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT,
FACTUAL REPORT: OCTOBER / NOVEMBER 2022

CLIENT

DEPARTMENT OF DEFENCE

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Appendix B

Tables

Appendix B Tables

Property ID	Well ID	Screen depth (m)	Hydrasleeve™ Install Date	Approximate Hydrasleeve™ Installation Depth (mbtoc)	Hydrasleeve™ Sample Date	Hydrasleeve™ Redeployed Post-Sampling?	Aquifer	Well Depth (mbtoc)	Depth to Water (mbtoc)	TOC Elevation (mAHD)	Groundwater Elevation (mAHD)	Condition of Well	DO (mg/L)	EC (µS/cm)	pH	Er (mV)	Eh (mV)	Temp (°C)	Water Colour	Odour	Sheen	Sample Method / Comments
0861	MW002	16.7-23.7	31/03/2022	22.50	26/10/2022	Yes	Walloon Coal Measures	24.34	17.38	Unknown	Unknown	Good	1.21	16243	5.8	-43.7	161.3	23.4	Clear	No odour	No sheen	Hydrasleeve™
0861	MW005	13.0-17.0	18/10/2022	16.00	24/10/2022	No	Alluvium	17.83	15.012	26.725	11.713	Good	0.93	2612	6.12	-83.1	121.9	23.8	Clear	No odour	No sheen	Hydrasleeve™
0861	MW006	10.3-14.3	24/10/2022	12.30	26/10/2022	No	Alluvium	13.31	9.88	21.937	12.057	Good	2.14	1742	7.17	-39.5	165.5	22.8	Clear	No odour	No sheen	Hydrasleeve™
0861	MW007	6.0-10.0	24/10/2022	9.00	26/10/2022	No	Alluvium	10.74	7.804	23.208	15.404	Good	1.23	4054	7.01	-14.8	190.2	23.9	Clear	No odour	No sheen	Hydrasleeve™
0861	MW012	12.5-17.5	21/10/2022	15.00	24/10/2022	No	Tertiary Formation	16.04	9.262	26.175	16.913	Good	1.39	15400	6.2	-59.1	145.9	28.8	Clear	No odour	No sheen	Hydrasleeve™
0861	MW020	23.5-16.5	21/10/2022	15.00	25/10/2022	No	Tertiary Formation	16.62	9.32	27.043	17.723	Good	1.44	7890	6.49	-31.1	173.9	25.5	Clear	No odour	No sheen	Hydrasleeve™
0861	MW021	2.5-6.0	25/10/2022	4.50	26/10/2022	No	Alluvium	5.62	2.523	20.72	18.197	Good	1.45	1533	6.64	50	255	22.3	Clear	No odour	No sheen	Hydrasleeve™
0861	MW022	4.0-9.0	18/10/2022	8.00	09/11/2022	No	Alluvium	9.71	6.067	19.65	13.583	Good	4.3	523.5	7.05	9.9	214.9	22.1	Clear	No odour	No sheen	Hydrasleeve™
0861	MW023	7.8-11.8	24/10/2022	8.70	26/10/2022	No	Alluvium	12.87	8.788	20.51	11.722	Good	1.28	3654	6.46	-22.2	182.8	23	Clear	No odour	No sheen	Hydrasleeve™
0861	MW024	7.0-11.0	04/04/2022	10.50	26/10/2022	No	Alluvium	11.94	6.979	20.95	13.971	Good	1.64	3921	6.93	-23.3	181.7	22	Clear	No odour	No sheen	Hydrasleeve™
0861	MW025	7.4-11.4	18/10/2022	10.00	24/10/2022	No	Alluvium	12.47	8.795	25.42	16.625	Good	2.62	1225	7.55	-68.7	136.3	25.8	Clear	No odour	No sheen	Hydrasleeve™
0861	MW026	14.5-17.5	21/10/2022	16.00	24/10/2022	No	Tertiary Formation	17.53	11.264	40.24	28.976	Good	3.98	27834	6.22	-69.1	135.9	25.6	Clear	No odour	No sheen	Hydrasleeve™
0861	MW028	10.5-14.5	20/10/2022	12.50	26/10/2022	No	Alluvium	13.9	9.64	20.83	11.19	Good	0.91	6378	6.57	-8.9	196.1	22.7	Clear	No odour	No sheen	Hydrasleeve™
0861	MW029	7.0-10.0	20/10/2022	9.00	26/10/2022	No	Alluvium	11.1	8.463	18.23	9.767	Good	3.21	6038	6.71	9.4	214.4	22.3	Clear	No odour	No sheen	Hydrasleeve™
0861	MW030	17.0-21.0	24/10/2022	20.00	25/10/2022	No	Walloon Coal Measures	21.82	15.927	35.84	19.913	Good	2.97	24823	6.16	-13.3	191.7	22.9	Clear	No odour	No sheen	Hydrasleeve™
0861	MW309	13.0-19.0	30/03/2022	18.00	25/10/2022	Yes	Tertiary Formation	19.39	10.605	28.607	18.002	Good	1.5	14064	6.46	-62.2	142.8	25.4	Clear	No odour	No sheen	Hydrasleeve™
0861	MW031	14.5-20.5	24/10/2022	17.00	25/10/2022	No	Tertiary Formation	18.01	16.075	33.45	17.375	Good	1.78	16690	6.86	-66.2	138.8	23.3	Clear	No odour	No sheen	Hydrasleeve™
0861	MW032	8.0-14.0	18/10/2022	13.00	24/10/2022	No	Alluvium	14.69	9.365	26.28	16.915	Good	1.91	3442	6.36	-69.7	135.3	24.2	Clear	No odour	No sheen	Hydrasleeve™
0861	MW033	29.0-33.0	25/10/2022	32.00	26/10/2022	No	Walloon Coal Measures	33	24.065	42.456	18.391	Good	1.65	16326	6.23	-67.1	137.9	24.4	Clear	No odour	No sheen	Hydrasleeve™
0861	MW034	5.0-10.0	19/10/2022	9.00	09/11/2022	No	Alluvium	10.65	7.8	24.305	16.505	Good	3.4	1612	6.88	11	216	26.1	Clear	Sulfuric odour	No sheen	Hydrasleeve™
0861	MW035	8.0-13.5	19/10/2022	12.50	09/11/2022	No	Alluvium	14.66	9.996	24.999	15.003	Good	3.5	2344	6.27	60	265	23.1	Clear	No odour	No sheen	Hydrasleeve™
0861	MW036	10.2-15.2	24/10/2022	14.00	25/10/2022	No	Alluvium	15.01	12.5	24.04	11.54	Good	2.66	2308	7.15	175.7	380.7	21.4	Clear	No odour	No sheen	Hydrasleeve™
0861	MW037	5.0-10.0	18/10/2022	9.00	24/10/2022	No	Alluvium	11	7.112	25.219	18.107	Good	2.1	8583	6.01	-94.3	110.7	23.2	Clear	No odour	No sheen	Hydrasleeve™
0861	MW041	11.5-14.5	5/04/2022	13.00	25/10/2022	Yes	Walloon Coal Measures	14.43	6.764	46.383	39.619	Good	1.5	14064	6.46	-63.2	141.8	25.4	Black	HC odour	No sheen	Hydrasleeve™
0861	MW042	24.0-30.0	05/04/2022	27.50	25/10/2022	Yes	Walloon Coal Measures	26.67	18.83	40.036	21.206	Good	0	19317	6.41	-249.9	-44.9	25.3	Black	HC/foul odour	No sheen	Hydrasleeve™
0861	MW043	18.0-21.0	05/04/2022	19.50	25/10/2022	Yes	Walloon Coal Measures	20.87	11.717	49.182	37.465	Good	1	17232	6.24	-32.9	172.1	25.4	Green	No odour	No sheen	Hydrasleeve™
0861	MW044	8.0-11.0	01/04/2022	10.00	26/10/2022	Yes	Alluvium	11.11	7.944	20.311	12.367	Good	0.74	317.1	6.83	-12.1	192.9	23	Grey	No odour	No sheen	Hydrasleeve™
0861	MW046	8.2-11.2	30/03/2022	10.00	25/10/2022	Yes	Tertiary Formation	11.02	7.165	26.001	18.836	Good	0.01	2255	6.92	-83	122	24.5	Clear	No odour	No sheen	Hydrasleeve™
0861	MW047	10.5-13.5	30/03/2022	12.00	25/10/2022	Yes	Tertiary Formation	13.26	9.469	26.265	16.796	Good	0.47	1618	6.91	-82.2	122.8	22.8	Clear	No odour	No sheen	Hydrasleeve™
0861	MW048	7.5-10.5	29/03/2022	9.50	25/10/2022	Yes	Alluvium	10.25	7.138	23.108	15.97	Good	1.08	622	6.32	-41	164	22.8	Clear	No odour	No sheen	Hydrasleeve™
0861	MW049	7.5-10.5	7/04/2022	9.00	25/10/2022	Yes	Alluvium	10.26	7.787	22.044	14.257	Good	2.43	440.2	6.58	-44.8	160.2	22.9	Clear	No odour	No sheen	Hydrasleeve™
0861	MW050	11.5-14.5	30/03/2022	13.30	24/10/2022	Yes	Alluvium	14.31	10.01	24.317	14.307	Good	5.37	436.1	6.66	-83.1	121.9	23.8	Clear	No odour	No sheen	Hydrasleeve™
0861	MW054D	18.0-21.0	05/04/2022	20.00	09/11/2022	Yes	Walloon Coal Measures	21.06	5.236	20.454	15.218	Good	1.7	561	6.33	13.3	218.3	22.5	brown	No odour	No sheen	Hydrasleeve™
0861	MW054S	4.0-7.0	5/04/2022	6.00	09/11/2022	Yes	Alluvium	6.92	4.704	20.38	15.676	Good	1.9	2771	6.69	24.5	229.5	21.4	Clear	No odour	No sheen	Hydrasleeve™
0861	MW055D	28.0-34.0	01/04/2022	32.50	20/10/2022	Yes	Walloon Coal Measures	33.44	7.885	22.196	14.311	Good	1.61	7726	7	-41.5	163.5	22.1	Clear	No odour	No sheen	Hydrasleeve™
0861	MW055S	9.0-12.0	01/04/2022	10.50	20/10/2022	Yes	Alluvium	11.72	7.412	22.14	14.728	Good	4.79	682	7.13	12.4	217.4	21.6	Clear	No odour	No sheen	Hydrasleeve™
0861	MW056I	15.0-18.0	Unable to access due to dense vegetation				Tertiary Formation	Unable to access due to dense vegetation														
0861	MW056S	6.5-9.5	Unable to access due to dense vegetation				Alluvium	Unable to access due to dense vegetation														
0861	MW057I	12.5-15.5	04/04/2022	14.50	26/10/2022	Yes	Tertiary Formation	15.44	5.52	16.494	10.974	Good	3.31	513.9	6.95	-22.9	182.1	22.3	Grey	No odour	No sheen	Hydrasleeve™
0861	MW057S	5.5-8.5	04/04/2022	7.00	26/10/2022	Yes	Alluvium	8.41	3.992	16.479	12.487	Good	0.03	1622	7.03	-27.1	177.9	21.8	Grey	No odour	No sheen	Hydrasleeve™

Notes
All Hydrasleeves™ were installed a minimum of 24 hours prior to sampling.
m - metres
mbtoc - metres below top of casing
mAHD - metres above Australian Height Datum
TOC - Top of Casing
DO - Dissolved Oxygen
EC - Electrical Conductivity
Er - Uncorrected Oxidation Reduction Potential
Eh - Corrected Oxidation Reduction Potential
` - no data
Er converted to Eh by adding 205 based on a YSI with Ag/AgCl sensor calibrated to a 3.5 molar KCL solution
mg/L - milligrams per litre
µS/cm - microsiemens per centimetre
mV - millivolts
°C - degrees Celcius

		PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSE	EtFOSE	MeFOSA	EtFOSA	MeFOSAA	EtFOSAA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.1	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.05	0.02	0.02	0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.01
NEMP (HEPA, 2020) Human Health Drinking Water		**0.07**											**0.56**																		
NEMP (HEPA, 2020) Freshwater 99% Species Protection							*0.00023*						*19*																		
NEMP (HEPA, 2020) Freshwater 95% Species Protection							***0.13***						***220***																		

Location ID	Sample ID	Sample Date	Lab Report No.																													
MW002	0861_MW002_221026	26/10/2022	EB2231825	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW005	0861_MW005_221024	24/10/2022	EB2231825	**0.07**	<0.02	<0.02	0.04	<0.02	***0.03***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.07
MW006	0861_MW006_221026	26/10/2022	EB2231825	**56.7**	2.05	1.8	12.9	0.62	***43.8***	<0.05	0.7	1.94	5.06	0.74	**1.05**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	0.22	<0.12	<0.12	<0.12	<0.12	<0.05	<0.05	<0.05	0.42	<0.05	<0.05	71.3
MW007	0861_MW007_221026	26/10/2022	EB2231825	**16.4**	1.5	1.7	10.6	0.5	***5.78***	<0.02	0.3	0.53	2.95	0.42	**0.69**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	25
MW012	0861_MW012_221024	24/10/2022	EB2231825	0.06	<0.02	<0.02	<0.01	<0.02	***0.06***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06
MW020	0861_MW020_251025	25/10/2022	EB2231825	**3.25**	0.16	0.17	1.12	0.06	***2.13***	<0.05	0.2	0.36	0.31	0.09	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.66
MW021	0861_MW021_221026	26/10/2022	EB2231825	**88**	1.91	3.57	37.4	2.06	***50.6***	<0.05	0.3	0.73	4.45	0.93	**3.07**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.12	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	105
MW022*	0861_MW022_221109	9/11/2022	EB2233631	**1.64**	0.18	0.22	1.53	<0.02	***0.12***	<0.02	<0.1	0.04	0.21	0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.26
MW023	0861_MW023_221026	26/10/2022	EB2231825	**0.5**	0.09	0.06	0.37	<0.02	***0.13***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.65
MW024	0861_MW024_221026	26/10/2022	EB2231825	0.04	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04
MW025	0861_MW025_221024	24/10/2022	EB2231825	**2.44**	0.25	0.2	1.38	0.06	***1.06***	<0.02	0.3	0.38	0.64	0.15	0.17	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.59
MW026	0861_MW026_221024	24/10/2022	EB2231825	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02
MW028	0861_MW028_221026	26/10/2022	EB2231825	**16.3**	0.8	0.85	5.97	0.64	***10.3***	<0.02	0.2	0.23	1.27	0.21	0.42	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	20.9
MW029	0861_MW029_221026	26/10/2022	EB2231825	**11.8**	0.78	0.97	6.14	0.56	***5.63***	<0.02	0.1	0.2	1.11	0.18	0.29	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	16
MW030	0861_MW030_251025	25/10/2022	EB2231825	**11.6**	5.49	4.49	11.4	0.22	***0.16***	<0.02	1.5	2.01	13.2	1.83	**1.19**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	41.5
MW031	0861_MW031_251025	25/10/2022	EB2231825	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02
MW032	0861_MW032_221024	24/10/2022	EB2231825	**37.4**	1.69	1.89	9.52	1.47	***27.9***	<0.02	0.6	0.72	4.3	0.89	**2.23**	0.06	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.08	<0.05	<0.05	51.4
MW033	0861_MW033_221026	26/10/2022	EB2231825	0.02	<0.02	<0.02	<0.01	<0.02	0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.02
MW034	0861_MW034_221109	9/11/2022	EB2233631	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW035	0861_MW035_221109	9/11/2022	EB2233631	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW036	0861_MW036_251025	25/10/2022	EB2231825	0.04	<0.02	<0.02	0.04	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.04
MW037	0861_MW037_221024	24/10/2022	EB2231825	**4.32**	1.43	1.26	3.91	<0.02	***0.41***	<0.02	0.1	0.17	1.15	0.1	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.56
MW041	0861_MW041_251025	25/10/2022	EB2231825	**0.12**	0.1	<0.02	0.04	<0.02	***0.08***	<0.02	0.2	0.11	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	0.02	0.03	0.1	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.74
MW042	0861_MW042_221026	26/10/2022	EB2231825	<0.02	<0.02	<0.02	<0.02	<0.02	<0.13	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02
MW043**	0861_MW043_251025	25/10/2022	EB2231825	**0.14**	0.06	<0.02	0.08	<0.02	***0.06***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.14
MW044***	0861_MW044_221026	26/10/2022	RN1371573	<0.02	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02
MW046	0861_MW046_251025	25/10/2022	EB2231825	**335**	13.9	16.5	120	12.6	***215***	<0.25	17.8	34.9	74.8	12.7	*31.6*	0.66	<0.25	<0.25	<0.25	<0.25	<0.63	<0.25	<0.63	<0.63	<0.63	<0.63	<0.25	<0.25	<0.25	34.6	1.74	<0.25	587
MW047	0861_MW047_251025	25/10/2022	EB2231825	**16.7**	1.45	1.39	10.3	0.52	***6.38***	<0.02	0.5	0.6	2.64	0.24	0.52	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	24.5
MW048	0861_MW048_251025	25/10/2022	EB2231825	**20.9**	0.86	1.01	7.46	0.32	***13.4***	<0.02	<0.5	0.24	1.37	0.14	0.26	<0.1	<0.1	<0.1	<0.1	<0.1	<0.25	<0.1	<0.25	<0.25	<0.25	<0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	25.1
MW049	0861_MW049_251025	25/10/2022	EB2231825	**15.9**	1.49	1.17	5.68	0.22	***10.2***	<0.02	0.6	0.61	2.55	0.28	0.4	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	23.2
MW050	0861_MW050_221024	24/10/2022	EB2231825	**0.17**	<0.02	<0.02	0.07	<0.02	***0.1***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17
MW054S	0861_MW054S_221109	9/11/2022	EB2233627	**0.38**	0.03	0.03	0.2	<0.02	***0.18***	<0.02	<0.1	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.47
MW054D	0861_MW054D_221109	9/11/2022	EB2233627	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW055D	0861_MW055D_221020	20/10/2022	EB2231197	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW055S	0861_MW055S_221020	20/10/2022	EB2231197	**0.14**	<0.02	<0.02	0.09	<0.02	***0.05***	<0.02	<0.1	<0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17
MW056I	Not sampled: Unable to access due to dense vegetation																															
MW056S	Not sampled: Unable to access due to dense vegetation																															
MW057I	0861_MW057I_221026	26/10/2022	EB2231850	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
MW057S	0861_MW057S_221026	26/10/2022	EB2231850	**2.57**	0.37	0.31	1.54	0.07	***1.03***	<0.02	0.1	0.06	0.33	0.05	0.11	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.97
MW309	0861_MW309_251025	25/10/2022	EB2231825	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02

LOR is limit of reporting
µg/L is micrograms per litre
'-' denotes no analysis undertaken
'<' denotes concentration is less than
NEMP is National Environmental Mangement Plan
NHMRC is National Health Medical Research Council
Denotes first time detection above LOR
Denotes new exceedance of human health guideline values

* Duplicate sample from MW022 reported higher slightly higher results for PFHxS and PFPeS compared to the primary sample. The duplicate results are presented in this table.
** The duplicate sample from MW043 reported slightly higher resutls for PFBS, PFHxS and PFOS compared to the primary sample. The duplicate results are presented in this table.
***Due to matrix interference in the primary and duplicate samples from MW044, the LORs were raised. The triplicate sample, analysed by NMI was not affected by matrix interference. The triplicate results are presented in this table.

Property ID	Location ID	Sample Date	Location	DO (PPM or mg/L)	EC (µS/cm)	pH	Er (mV)	Eh (mV)	Temp (°C)	Odour	Sheen
0861	SW002	21/10/2022	Drain	6.36	251.7	7.76	5.4	210.4	21.2	No odour	No sheen
0861	SW003	21/10/2022	Drain	7.28	183.1	7.9	-7.8	197.2	21.5	No odour	No sheen
0861	SW004	18/10/2022	Warrill Creek	6.58	539.7	7.01	-9.1	195.9	20.9	No odour	No sheen
0861	SW005	18/10/2022	Warrill Creek	2.85	498.6	6.93	-71.2	133.8	20	No odour	No sheen
0861	SW008	28/03/2022	Drain	0.36	418.2	6.78	91.17	296.17	24.2	No odour	No sheen
0861	SW009	18/10/2022	Warrill Creek	6.28	814	6.57	-9.1	195.9	21.8	No odour	No sheen
0861	SW011	18/10/2022	Drain	Not sampled: In an exclusion zone for underground service repairs and road works.							
0861	SW015	18/10/2022	Warrill Creek	7.44	542.4	6.85	-11.1	193.9	20.9	No odour	No sheen
0861	SW016	18/10/2022	Warrill Creek	6.73	592.5	7.2	3	208	20.9	No odour	No sheen
0861	SW018	18/10/2022	Warrill Creek	6.51	540.3	7.11	3	208	20.7	No odour	No sheen
0861	SW020	18/10/2022	Warrill Creek	7.12	540.2	7.19	11.9	216.9	20.7	No odour	No sheen
0861	SW021	21/10/2022	Drain	6.15	349.8	7.29	-17.4	187.6	20.8	No odour	No sheen
0861	SW025	20/10/2022	Bremer River	4.12	783	7.23	7.3	212.3	20	No odour	No sheen
0861	SW026	20/10/2022	Warrill Creek	5.24	441.7	7.39	15.6	220.6	20.4	No odour	No sheen
0861	SW027	21/10/2022	Drain	8.89	92.3	8.21	13.6	218.6	21.1	No odour	No sheen
0861	SW028	18/10/2022	Drain	8.69	447.2	6.75	3.3	208.3	22.5	No odour	No sheen
0861	SW030	21/10/2022	Drain	6.63	375.1	7.28	2.4	207.4	20.8	No odour	No sheen
0861	SW033	25/10/2022	Drain	5.03	380.7	7.6	51	256	32.6	No odour	No sheen
0861	SW034	18/10/2022	Warrill Creek	6.45	539.9	7.14	-21.5	183.5	20.7	No odour	No sheen
0861	SW036	19/10/2022	Bremer River	4.14	93.7	7.15	-12.3	192.7	20.4	No odour	No sheen
0861	SW037	21/10/2022	Drain	2.81	314	7.28	114.8	319.8	20.6	No odour	No sheen
0861	SW038	24/10/2022	Drain	8.56	203.8	6.96	-50	155	21.3	No odour	No sheen
0861	SW039	20/10/2022	Bremer River	4.79	616	7.09	10.9	215.9	20.5	No odour	No sheen
0861	SW040	20/10/2022	Bremer River	8.02	536.2	7.34	27.1	232.1	20.4	No odour	No sheen
0861	SW041	20/10/2022	Drain	6.59	185.8	7.63	-16.6	188.4	20.2	No odour	No sheen
0861	SW043	20/10/2022	Warrill Creek	6.43	109.5	7.38	10	215	20.5	No odour	No sheen
0861	SW045	20/10/2022	Bremer River	6.51	532.9	7.51	16.1	221.1	20.5	No odour	No sheen
0861	SW047	19/10/2022	Bremer River	5.31	796.1	7.15	-25.1	179.9	20.5	No odour	No sheen
0861	SW048	21/10/2022	Drain	5.97	33.6	7.48	-0.5	204.5	21.3	No odour	No sheen
0861	SW049	19/10/2022	Drain	5.89	168.7	7.32	29.2	234.2	22.4	No odour	No sheen
0861	SW050	20/10/2022	Bremer River	Not accessible due to site conditions							
0861	SW051	20/10/2022	Bremer River	5.09	446.5	7.22	19.5	224.5	20.3	No odour	No sheen
0861	SW052	19/10/2022	Bremer River	4.53	513.5	7.23	-2.1	202.9	20.6	No odour	No sheen
0861	SW053	24/10/2022	Drain	7.75	402.6	6.63	-55.2	149.8	22.5	No odour	No sheen
0861	SW056	21/10/2022	Drain	3.84	319.9	7.19	10.9	215.9	21.1	No odour	No sheen
0861	SW059	21/10/2022	Drain	4.32	332.6	7.02	-66.6	138.4	20.4	No odour	No sheen
0861	SW064	24/10/2022	Drain	6.16	144.4	7.64	-7.9	197.1	22	No odour	No sheen
0861	SW067	24/10/2022	Drain	5.17	125.6	7.11	-10.2	194.8	27.7	No odour	No sheen
0861	SW076	21/10/2022	Drain	Not sampled: In an exclusion zone for underground service repairs and road works.							
0861	SW079	24/10/2022	Drain	5.95	262.3	6.51	37.5	242.5	21.2	No odour	No sheen
0861	SW080	24/10/2022	Drain	5.9	149.6	6.3	-63.9	141.1	20	No odour	No sheen
0861	SW088	19/10/2022	Bremer River	5.31	495.2	7.19	-22.2	182.8	20.6	No odour	No sheen
0861	SW089	19/10/2022	Bremer River	1.41	332.2	6.94	-3.3	201.7	19.1	No odour	No sheen
0861	SW090	21/10/2022	Bremer River	5.45	616	7.19	-22	183	19.8	No odour	No sheen
0861	SW091	21/10/2022	Bremer River	6.33	608	7.59	-11.8	193.2	19.9	No odour	No sheen
0861	SW094	19/10/2022	Bremer River	4.9	494.8	7.13	-9.5	195.5	20.5	No odour	No sheen
0861	SW098	20/10/2022	Bremer River	6.67	294.7	7.95	7.6	212.6	20	No odour	No sheen
0861	SW099	20/10/2022	Warrill Creek	6.69	660	7.26	21.8	226.8	20.3	No odour	No sheen
0861	SW100	20/10/2022	Warrill Creek	7.19	674	7.38	20.2	225.2	26.3	No odour	No sheen

Notes
DO - Dissolved Oxygen
EC - Electrical Conductivity
Er - Uncorrected Oxidation Reduction Potential
Eh - Corrected Oxidation Reduction Potential
` - no data
Er converted to Eh by adding 205 based on a YSI with Ag/AgCl sensor calibrated to a 3.5 molar KCL solution
mg/L - milligrams per litre
µS/cm - microsiemens per centimetre
mV - millivolts
°C - degrees Celcius

		PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSE	EtFOSE	MeFOSA	EtFOSA	MeFOSAA	EtFOSAA	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.1	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.01
NEMP (HEPA, 2020) Human Health Recreational Water		**2.0**											**10**																		
NEMP (HEPA, 2020) Freshwater 99% Species Protection							*0.00023*						*19*																		
NEMP (HEPA, 2020) Freshwater 95% Species Protection							***0.13***						***220***																		

Location ID	Sample ID	Sample Date	Lab Report No.																													
SW002	0861_SW002_221021	21/10/2022	EB2231197	0.5	0.03	<0.02	0.19	<0.02	**0.31**	<0.02	<0.1	0.17	0.16	0.08	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.98
SW003	0861_SW003_221021	21/10/2022	EB2231197	0.43	<0.02	<0.02	0.1	<0.02	**0.33**	<0.02	<0.1	0.06	0.06	0.03	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.6
SW004	0861_SW004_221018	18/10/2022	EB2231197	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW005	0861_SW005_221018	18/10/2022	EB2231197	1.74	0.09	0.07	0.51	0.03	**1.23**	<0.02	<0.1	0.04	0.13	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.13
SW008	0861_SW008_221026	26/10/2022	EB2231825	0.07	<0.05	<0.05	<0.05	<0.05	*0.07*	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.13	<0.05	<0.13	<0.13	<0.13	<0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07
SW009	0861_SW009_221018	18/10/2022	EB2231197	1.37	0.14	0.12	0.71	0.03	**0.66**	<0.02	<0.1	0.12	0.36	0.06	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.28
SW011	Not sampled: Not accessible as located in an exclsion zone for construction works.																															
SW015	0861_SW015_221018	18/10/2022	EB2231197	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW016	0861_SW016_221018	18/10/2022	EB2231197	0.01	<0.02	<0.02	<0.01	<0.02	*0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01
SW018	0861_SW018_221018	18/10/2022	EB2231197	<0.01	<0.02	<0.02	<0.01	<0.02	<0.03	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW020	0861_SW020_221018	18/10/2022	EB2231197	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW021	0861_SW021_221021	21/10/2022	EB2231197	**24.6**	1.08	1.39	9.98	0.56	**14.6**	0.08	0.9	1.78	4.66	0.67	1.94	0.1	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	37.7
SW025	0861_SW025_221020	20/10/2022	EB2231202	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW026	0861_SW026_221020	20/10/2022	EB2231202	0.58	0.03	0.03	0.23	<0.02	**0.35**	<0.02	<0.1	<0.02	0.06	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.72
SW027	0861_SW027_221021	21/10/2022	EB2231197	0.24	<0.02	<0.02	0.08	<0.02	**0.16**	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.28
SW030	0861_SW030_221021	21/10/2022	EB2231197	**9.74**	0.51	0.59	4.74	0.32	**5**	<0.02	0.2	0.44	1.27	0.24	0.3	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.69	<0.05	<0.05	14.3
SW033	0861_SW033_251025	25/10/2022	EB2231825	**22.4**	0.6	0.74	5.27	0.27	**17.1**	0.26	0.7	0.85	2.58	0.37	0.88	0.03	<0.02	<0.02	<0.02	<0.02	<0.05	0.16	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	29.8
SW034	0861_SW034_221018	18/10/2022	EB2231197	0.5	0.02	0.02	0.2	<0.02	**0.3**	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.58
SW036	0861_SW036_221019	19/10/2022	EB2231197	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW037	0861_SW037_221021	21/10/2022	EB2231197	**3.37**	0.22	0.22	1.55	0.1	**1.82**	<0.02	<0.1	0.14	0.43	0.06	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	4.66
SW038	0861_SW038_221024	24/10/2022	EB2231825	0.11	<0.02	<0.02	0.04	<0.02	*0.07*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.11
SW039	0861_SW039_221020	20/10/2022	EB2231202	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW040	0861_SW040_221020	20/10/2022	EB2231202	0.35	<0.02	<0.02	0.14	<0.02	**0.21**	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.39
SW041	0861_SW041_221020	20/10/2022	EB2231197	1.78	0.08	0.1	0.78	0.04	**1**	<0.02	<0.1	0.04	0.2	0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.31
SW043	0861_SW043_221020	20/10/2022	EB2231202	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW045	0861_SW045_221020	20/10/2022	EB2231202	0.17	<0.02	<0.02	0.07	<0.02	*0.1*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17
SW047	0861_SW047_221019	19/10/2022	EB2231197	<0.01	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW048	0861_SW048_221019	21/10/2022	EB2231197	0.59	<0.03	0.02	0.16	<0.02	**0.43**	<0.02	<0.1	0.02	0.08	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	0.79
SW049	0861_SW049_221019	19/10/2022	EB2231197	0.66	0.03	<0.02	0.19	<0.02	**0.47**	<0.02	<0.1	<0.02	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.75
SW050	Not sampled: Not accessible as located in an exclsion zone for construction works.																															
SW051	0861_SW051_221020	20/10/2022	EB2231197	0.33	0.03	0.02	0.16	<0.02	**0.17**	<0.02	<0.1	0.02	0.06	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.47
SW052	0861_SW052_221019	19/10/2022	EB2231197	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW053	0861_SW053_221024	24/10/2022	EB2231825	0.35	<0.02	0.02	0.18	<0.02	*0.17*	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.41
SW056	0861_SW056_221021	21/10/2022	EB2231197	**5.00**	0.35	0.36	2.69	0.1	**2.31**	<0.02	0.1	0.32	0.88	0.18	0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.06	<0.05	<0.05	7.55
SW059	0861_SW059_221021	21/10/2022	EB2231197	**8.68**	0.52	0.52	3.27	0.2	**5.41**	<0.02	0.2	0.58	1.41	0.24	0.55	0.04	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.11	<0.05	<0.05	13
SW064	0861_SW064_221024	24/10/2022	EB2231825	0.73	0.04	0.02	0.24	<0.02	**0.49**	<0.02	<0.1	<0.02	0.06	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.85
SW067	0861_SW067_221024	24/10/2022	EB2231825	**7.72**	0.52	0.47	3.48	0.13	**4.24**	<0.02	0.5	0.55	0.94	0.13	0.2	0.09	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.2
SW076	Not sampled: Not accessible as located in an exclsion zone for construction works.																															
SW079	0861_SW079_221024	24/10/2022	EB2231825	1.76	0.08	0.08	0.74	0.03	**1.02**	<0.02	<0.1	0.05	0.16	<0.02	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.19
SW080	0861_SW080_221024	24/10/2022	EB2231825	1.98	<0.1	<0.1	0.76	<0.1	**1.22**	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.25	<0.1	<0.25	<0.25	<0.25	<0.25	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.98
SW088	0861_SW088_221019	19/10/2022	EB2231197	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW089	0861_SW089_221019	19/10/2022	EB2231197	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW090	0861_SW090_221021	21/10/2022	EB2231197	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW091	0861_SW091_221021	21/10/2022	EB2231197	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW094	0861_SW094_221019	19/10/2022	EB2231197	<0.01	<0.02	<0.02	<0.01	<0.02	<0.01	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
SW098	0861_SW098_221020	20/10/2022	EB2231202	0.43	0.03	0.02	0.18	<0.02	**0.25**	<0.02	<0.1	0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.59
SW099	0861_SW099_221020	20/10/2022	EB2231197	0.12	<0.02	<0.02	0.04	<0.02	*0.08*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.12
SW100	0861_SW100_221020	20/10/2022	EB2231197	0.09	<0.02	<0.02	0.03	<0.02	*0.06*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09

Notes:
LOR is limit of reporting
µg/L is micrograms per litre
'-' denotes no analysis undertaken
'<' denotes concentration is less than
NEMP is National Environmental Mangement Plan
NHMRC is National Health Medical Research Council
Denotes first time detection above LOR
Denotes new exceedance of human health guideline values

Property ID	Location ID	Sample Date	Sample Description	Odour	Notes on River Conditions
0861	SD002	21/10/2022	SILT, brown, low plasticity, saturated.	Organic odour	Manmade drainage channel around 10m width, running west to east. Water is shallow, ~0.1m depth, pooled, clear with bright green algae and aquatic plants. Long grass in channel. Sediment slug to the east of the culvert.
0861	SD003	21/10/2022	Silty CLAY, brown, medium plasticity, firm, saturated.	Organic odour	Wide and deep drainage channel, draining north west from the airstrip. Around 40m width and 10m depth. Steep eroded bank to the south west. Heavily vegetated channel with grass, reeds and trees. Reenforced north east bank with large angular boulders.
0861	SD004	18/10/2022	Silty CLAY, brown, low plasticity, soft, wet with a trace of fine sand.	No odour	Abundant woody debris in river channel. Eroded southern bank. Brown, flowing water, around 0.5m depth. Flowing west to east. Evidence of flooding (stacked debris).
0861	SD005	18/10/2022	Silty CLAY, brown, low plasticity, soft, wet with a trace of sand	Organic odour	Brown, flowing water (west to east). Appears to be around 0.5m maximum depth. Clear, brown water with fish present. Established riparian vegetation on north bank. Steep eroded southern bank with no riparian vegetation, followed by grassed floodplain to the south. Woody debris within river channel.
0861	SD008	18/10/2022	Gravelly SILT, low plasticity, brown, soft, saturated, fine to medium subangular, well graded.	No odour	Still, pooled water with gently sloping grassed banks. Reeds and grass within channel. Flows west to east. Maximum 1m depth. Maximum 5m width.
0861	SD009	18/10/2022	Gravelly SILT, low plasticity, brown, soft, saturated, fine to medium subangular.	No odour	Flowing, west to east, slightly cloudy, brown water. Around 1m depth, and around 10m width. Vegetated sediment island within creek with established trees and grasses. Woody debris within channel. Fish present. Southern bank issteep and eroded with no vegetation. North bank is gradually sloping.
0861	SD011	Not sampled			
0861	SD015	18/10/2022	Silty CLAY, brown, low plasticity, very soft, saturated, trace of sand.	Organic odour	Gently flowing west to east. Slightly cloudy water. ~0.3m depth. Heavily vegetated on north bank with established trees and native grasses. Gently sloping north bank. South bank is steep with visible erosion and less vegetation.
0861	SD016	18/10/2022	Sandy SILT, brown, low plasticity, brown, soft, saturated, fine to coarse sand.	No odour	S+F10:H10till, clear water, brown in colour. Established riparian vegetation on north bank. Woody debris within channel. Fish observed in creek. Rubbish filled embankment ~20m north consists of concrete slabs, construction material, steel debris.
0861	SD018	18/10/2022	Silty CLAY, low plasticity, brown, soft, saturated, thick roots.	Organic odour	Clear, gently flowing water W to E. Approximately 0.3m depth. Wood debris in river channel. Large angular cobbles in channel (~30 cm). Well vegetated on both banks. Creek bed contains native grass vegetation. Lots of rubbish observed, including bottles, concrete, metal, and asbestos. Construction rubble in creek channel.
0861	SD020	18/10/2022	Silty CLAY, low plasticity, brown, firm, saturated.	No odour	Clear, still water. Heavily vegetated riparian banks to the north and south. Water gently flowing west to east. Water depth maximum 0.3m. Evidence of flooding (debris in trees).
0861	SD021	21/10/2022	Silty GRAVEL, brown, loose, fine to medium gravel, saturated.	No odour	Shallow, pooled, still water around 0.2m maximum depth. Thick grass and vegetation surrounding sample location.
0861	SD025	20/10/2022	Clayey SILT, low plasticity, brown, soft, saturated with coarse subangular gravel.	No odour	Still pooled water. Flow direction south to north evidenced by debris build up. Black water with small aquatic surface water plants. Depth >1m, width ~20m. Sparcely vegetated banks. Gradual sloping banks (<10°), with steep drop at waters edge.
0861	SD026	20/10/2022	Silty CLAY, brown, medium plasticity, firm, saturated.	No odour	Still, pooled, deep water. Very narrow channel, around 2m width. Heavily vegetated banks with native grasses and well established trees. Steep banks. Woody debris within and across the channel. Flow direction south to north.
0861	SD027	21/10/2022	Clayey SILT, brown, low plasticity, soft, saturated.	Organic odour	Heavily modified creek bed. Vegetated with reeds and trees. Flow direction east to west. Manmade cobble embankment to the south. Grassed, eroding bank to the north.
0861	SD028	18/10/2022	Clayey SILT, low plasticity, brown, soft, saturated, highly organic.	Organic odour	Pooled water channel with aquatic plants on the surface. Fish and tadpoles present. Long grass surrounding the channel (~1m high). No riparian vegetation. Relatively flat catchment (<5°) surrounding the channel. Water is black. Unable to see the bottom. Channel is ~ 2m width, and around 0.5m maximum depth. Appears to flow west to east.
0861	SD030	21/10/2022	Silty CLAY, brown, medium plasticity, saturated.	Organic odour	Drain beside road. Flat land surrounding. Manmade banks. No riparian vegetation. Grassed mown banks.
0861	SD033	25/10/2022	Silty CLAY, brown, low plasticity, soft, saturated.	No odour	Gently flowing east to west. Man made channel capturing runoff from training area and release from new water treatment tanks. Ponds immediatley adjacent to the south. Currently empty. Channel bed contains large angular cobbles and reenforcement wire.
0861	SD034	18/10/2022	SILT, low plasticity, brown, soft, saturated with organics.	Organic odour	Still brown water ~0.3m depth. Heavily vegetated riparian zones on both banks. Native grasses within channel. Rubbish observed in northern bank, including porcelain, glass, and rubber. Narrow drainage channel entering creek from the north to south at sample location.
0861	SD036	19/10/2022	Silty CLAY, brown, low plasticity, saturated, soft to firm.	No odour	Pooled deep water in channel. Unable to see the bottom. Large established gums and trees in channel. Aquatic plants covering entire surface. Western bank vegetated with grass and trees. Eastern bank is gently sloping, vegetated with native grasses. Channel is within a regeneration area.
0861	SD037	21/10/2022	SILT, brown, low plasticity, saturated.	Organic odour	Minimal water <0.1m depth. Still, pooled, and stagnant water. Very shallow drainage channel with mown grassed banks. Tall reeds around 2m high within channel.
0861	SD038	24/10/2022	Silty CLAY, brown, low plasticity, soft, saturated.	No odour	Still poolled water >1m depth, ~3m width. Appears to flow west to east (based on the gradient of the land). Large fish observed. Man made embankments with large angular cobble bank reenforcement. Water is clear with a brown/green colour. Aquatic plants on surface. Reeds on banks. Surrounded by open, mown, grassed area.
0861	SD039	20/10/2022	Silty CLAY, brown, medium plasticity, firm, saturated, trace of coarse subangular gravel.	No odour	Still pooled water beneath bridge. <0.2m depth. Large subangular boulders and cobbles within channel. Creek bed is vegetated with reeds and grasses and well established trees. Flow direction is S to N evidenced by woody debris within the creek.
0861	SD040	20/10/2022	Silty SAND, brown, fine to medium, loose, saturated.	No odour	Large, deep, still dam, with brown coloured water. Around 20m width. Depth >1m. Heavily vegetated banks on both sides. Well established trees and native grasses on both gently sloping banks. Vegetated bank around 50m width on north side. Drainage channel entering the dam from the NW. Sample taken around 2m upstream of drainage channel.
0861	SD041	20/10/2022	Clayey SILT, low plasticity, brown, soft, saturated.	No odour	Clear, black, pooled, still water. Maximum 0.3m depth. Channel is heavily vegetated with tall reeds. Large angular boulders within channel.
0861	SD043	20/10/2022	Clayey SILT, brown, low plasticity, soft, saturated.	No odour	Clear, flowing creek. Flowing south to north. Erosion channels on eastern bank beneath the bridge. Black cracking clays. Banks are well vegetated. Channel is around 5m width.
0861	SD045	20/10/2022	Silty SAND, brown, fine to medium, loose, saturated, trace of fine sand.	No odour	Still, clear, brown water, flowing west to east. Small aquatic plants on surface. Well vegetated banks on both sides with native grasses and trees.Gently sloping banks with a steep drop off next to sampling point. Woody debris along banks.
0861	SD047	19/10/2022	Silty CLAY, low plasticity, brown, soft, saturated.	No odour	Deep pooled water. Very steep bank on the western side. Channel around 40m width. Vegetated island with well established gums and trees within the river channel.
0861	SD048	20/20/2022	Clayey SILT, low plasticity, brown, soft, saturated.	No odour	Drainage leads from hangar to the north ~40m. Land slopes to the south west. Mowed grassed area.
0861	SD049	19/10/2022	Silty CLAY, medium plasticity, grey-brown, soft, saturated.	No odour	Large dam at the bottom of a grassy slope. Around 100m diameter. Deep, still, brown water. Aquatic reeds surrounding the banks. Ducks and fish present. Slopes gently from the east to the west.
0861	SD050	Not sampled			
0861	SD051	20/10/2022	Silty CLAY, brown, medium plasticity, firm, saturated.	No odour	Deep pooled, still water. Flow direction N to S evidenced by flood debris in trees. Very steep embankment. Channel around 5m width. Green scum covering entire surface. Woody debris within channel. Overland flow across embankments evident with rubbish (corrugated iron) running W to E. Heavily vegetated banks with native grasses, reeds, and trees.
0861	SD052	19/10/2022	Silty CLAY, low plasticity, brown, soft, saturated, trace of fine sand.	No odour	Still, pooled, deep water. Narrow channel is around 3m width. Entire surface is covered with small aquatic plants. Woody debris in channel. Banks are heavily vegetated. Flow direction is W to E evidenced by flood debris in trees. Very steep banks.
0861	SD053	24/10/2022	Silty CLAY, brown, low plasticity, soft, saturated.	No odour	Manmade drainage channel surrounding the runway. Water flowing south to north. Very shallow. Concrete base with 4 drains entering channel. Green
0861	SD056	21/10/2022	SILT, brown, low plasticity, saturated.	Organic odour	Flat surrounding land. Very gently sloping banks. Channel is around 2m maximum width. Depth around 0.2m max. Grassed mown banks. Reeds and aquatic plants within channel. Still, pooled water.
0861	SD059	21/10/2022	Clayey silt, low plasticity, brown, soft, saturated.	Organic odour	Manmade channel. Grassed and mown. Flat surrounding land. Large angular cobbles in drain.
0861	SD064	24/10/2022	Silty CLAY, brown, low plasticity, soft, saturated.	No odour	Very shallow, narrow drainage channel bordering the runway. Mown grassed area surrounding sample location.
0861	SD067	24/10/2022	Silty CLAY, brown, low plasticity, soft, saturated.	No odour	Small drainage channel. Concrete culvert contains dark green water. Culvert is covered with a grill. Very shallow channel. Mown grassed banks. Dry during visit.
0861	SD076	Not sampled			
0861	SD079	24/10/2022	Silty CLAY, brown, low plasticity, soft, saturated.	No odour	Manmade drainage channel bordering the runway. 2m high reeds in channel. Very tall reeds in channel. Green and brown algae in channel. No flow. Shallow. Around 0.2m depth. Very gently sloping mown grassed banks.
0861	SD080	24/10/2022	Silty CLAY, brown, low plasticity, soft, saturated.	No odour	Manmade drainage channel bordering the runway. 2m high reeds in channel. Sediment build up on the southern side of the culvert. Very gently sloping mown grassed banks.
0861	SD088	19/10/2022	Silty SAND, loose, brown, fine to medium, saturated.	No odour	Deep, wide channel. Entire surface is covered with small aquatic plants. Gently sloping vegetated banks. Woody debris within channel. Flow direction is west to east.
0861	SD089	19/10/2022	Silty CLAY, low plasticity, brown, soft, saturated, trace of fine sand.	No odour	Still, pooled, shallow water. Entire surface is covered with small aquatic plants. Woody debris across channel. Fallen trees across the banks. Flow direction is south to north evidenced by flood debris in trees. Very steep banks.
0861	SD090	21/10/2022	SILT, low plasticity, brown, soft, saturated with organics.	Slightly organic	Still, pooled, deep water. Channel is around 3m width. Entire surface is covered with small aquatic plants. Woody debris in channel. Banks are heavily vegetated. Flow direction is south to north evidenced by flood debris in trees. Very steep banks.
0861	SD091	21/10/2022	Silty CLAY, brown, medium plasticity, soft, saturated.	No odour	Still, pooled, clear water. Small aquatic plants on surface. Woody debris within creek channel. Fallen trees across channel. Channel around 3m width. Water around 0.3m depth. Heavily vegetated banks. Banks are fenced off for regeneration. Flow direction is south to north evidenced by flood debris in trees. Very steep banks.
0861	SD094	19/10/2022	Silty CLAY, medium plasticity, brown, firm, dry.	No odour	Shallow, pooled water in creek channel. Not flowing, clear, brown. Large woody debris within channel. Vegetated banks. Steep easterly bank, gently sloping on the west. Western bank is a revegetation area. Flow direction is north to south, evidenced by flood debris within the channel. Drainage channel entering the creek from the northwest to southeast. Heavily eroded.
0861	SD098	20/10/2022	Silty CLAY, brown, medium plasticity, soft, saturated.	No odour	Still pooled water beneath bridge. ~0.5m depth. Clear, with a brown colour. Water flow north to south evidenced by debris build up within creek. Film of white/green substance on water surface. Geofab on embankments. Vegetated banks on both sides with native grass and trees.
0861	SD099	20/10/2022	Sandy CLAY, brown, medium plasticity, brown, soft, saturated.	No odour	Deep, wide channel. Brown, turbid water. Gently flowing south to north. Woody debris along banks. Grassed bank to the west. Vegetated with well established trees to the east.
0861	SD100	20/10/2022	Clayey SILT, brown, low plasticity, soft, saturated.	No odour	Deep, narrow channel, gently flowing east to west. Clear, green/brown colour. Flood debris in trees and on banks. Very steep north bank. Long grass and vegetation on south bank.

	PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSA	MeFOSAA	MeFOSE	EtFOSA	EtFOSAA	EtFOSE	4:2 FTS	6:2 FTS	8:2 FTS	10:2 FTS	Sum of PFAS
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002

Location ID	Sample ID	Sample Date	Lab Report No.																												
SD002	0861_SD002_221021	21/10/2022	EB2231197	0.0148	<0.0002	<0.0002	0.0009	<0.0002	0.0139	0.0008	<0.001	0.0002	0.0004	<0.0002	0.0002	<0.0002	0.0002	0.0006	0.0009	0.0003	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0184
SD003	0861_SD003_221021	21/10/2022	EB2231197	0.0314	<0.0002	<0.0002	0.0046	0.0003	0.0268	0.0005	<0.001	0.0021	0.002	0.0016	0.0026	0.0007	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0414
SD004	0861_SD004_221018	18/10/2022	EB2231197	0.0024	<0.0002	<0.0002	0.0008	<0.0002	0.0016	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0024
SD005	0861_SD005_221018	18/10/2022	EB2231197	0.118	<0.001	<0.001	0.0049	<0.001	0.113	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.0025	<0.001	<0.0025	<0.0025	<0.001	<0.0025	<0.001	0.118
SD008	0861_SD008_221026	26/10/2022	EB2231825	0.0241	<0.0002	<0.0002	0.0017	<0.0002	0.0224	0.001	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0253
SD011	Not sampled: Not accessible as located in an exclsion zone for construction works.																														
SD015	0861_SD015_221018	18/10/2022	EB2231197	0.0044	<0.0002	<0.0002	0.0002	<0.0002	0.0042	0.0006	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.005
SD016	0861_SD016_221018	18/10/2022	EB2231197	0.0061	<0.0002	<0.0002	<0.0004	<0.0002	0.0061	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0061
SD018	0861_SD018_221018	18/10/2022	EB2231197	<0.001	<0.001	<0.001	<0.001	<0.001	<0.008	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.001	<0.0025	<0.0025	<0.001	<0.0025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
SD020	0861_SD020_221018	18/10/2022	EB2231197	0.0133	<0.0002	<0.0002	0.0007	<0.0002	0.0126	0.0009	<0.001	0.0002	0.0003	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0153
SD021	0861_SD021_221021	21/10/2022	EB2231197	0.124	0.001	0.0011	0.0133	0.0017	0.111	0.0117	<0.001	0.001	0.0033	0.0008	0.0022	0.0003	0.0002	0.001	0.001	0.0012	<0.0005	0.0034	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.154
SD025	0861_SD025_221020	20/10/2022	EB2231202	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD026	0861_SD026_221020	20/10/2022	EB2231202	0.0061	<0.0002	<0.0002	<0.0004	<0.0002	0.0061	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0061
SD027	0861_SD027_221021	21/10/2022	EB2231197	0.126	0.001	0.0016	0.021	0.0016	0.105	0.001	0.001	0.0017	0.007	0.0022	0.0027	0.0004	0.0015	0.0008	0.0018	0.0009	0.0009	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.152
SD028	0861_SD028_221018	18/10/2022	EB2231197	0.468	0.0013	<0.001	0.0147	0.0017	0.453	0.0104	<0.005	<0.001	0.0013	<0.001	<0.001	<0.001	<0.001	0.0175	<0.001	0.0044	<0.0025	0.0022	<0.0025	<0.001	<0.0025	<0.0025	<0.001	<0.0025	<0.001	<0.001	<0.001	0.506
SD030	0861_SD030_221021	21/10/2022	EB2231197	0.33	0.0018	0.0022	0.0336	0.0058	0.296	0.0022	0.002	0.0048	0.007	0.0026	0.0035	0.0016	0.0026	0.0067	0.0126	0.0045	0.0022	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0002	<0.0012	<0.0005	0.0025	0.0014	0.0005	0.396
SD033	0861_SD033_251025	25/10/2022	EB2231825	0.221	0.0005	0.0009	0.0138	0.0009	0.207	0.0145	<0.001	0.0012	0.0043	0.0006	0.0026	<0.0002	<0.0002	0.0003	0.0006	<0.0002	<0.0006	0.0016	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	<0.0005	<0.0005	<0.0005	0.249
SD034	0861_SD034_221018	18/10/2022	EB2231197	0.0621	<0.0005	<0.0005	0.0056	<0.0005	0.0565	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	0.0621
SD036	0861_SD036_221019	19/10/2022	EB2231197	0.01	<0.0002	<0.0002	0.0004	<0.0002	0.0096	0.0007	<0.001	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0111
SD037	0861_SD037_221021	21/10/2022	EB2231197	0.205	<0.0018	0.0022	0.021	0.0034	0.184	<0.0028	<0.001	0.0013	0.0046	<0.0004	0.0018	<0.0002	0.0012	0.0009	0.0016	0.0005	<0.0006	0.0004	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	<0.0005	<0.0005	<0.0005	0.223
SD038	0861_SD038_221024	24/10/2022	EB2231825	0.0229	<0.0002	<0.0002	0.0017	<0.0002	0.0212	0.0004	<0.001	0.0013	0.0014	0.0005	0.0005	<0.0002	0.0004	0.0008	0.0015	0.0003	<0.0005	0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0302
SD039	0861_SD039_221020	20/10/2022	EB2231202	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD040	0861_SD040_221020	20/10/2022	EB2231202	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0034	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD041	0861_SD041_221020	20/10/2022	EB2231197	0.366	0.0023	0.0122	0.0746	0.0061	0.291	0.005	<0.001	0.0006	0.0057	0.0012	0.0027	<0.0002	<0.0002	0.001	0.0024	0.0003	<0.0006	0.0013	<0.0006	<0.0002	<0.0006	<0.0006	<0.0002	<0.0006	<0.0005	<0.0005	<0.0005	0.406
SD043	0861_SD043_221020	20/10/2022	EB2231202	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD045	0861_SD045_221020	20/10/2022	EB2231202	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD047	0861_SD047_221019	19/10/2022	EB2231197	0.0015	<0.0002	<0.0002	<0.0002	<0.0002	0.0015	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0015
SD048	0861_SD048_221019	19/10/2022	EB2231197	0.0284	0.001	0.0007	0.0033	0.0002	0.0251	0.0014	<0.001	0.0009	0.0016	0.0005	<0.0002	<0.0002	<0.0002	0.0003	0.0004	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0354
SD049	0861_SD049_221019	19/10/2022	EB2231197	0.0108	<0.0002	<0.0002	0.0004	<0.0002	0.0104	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0108
SD050	Not sampled: Not accessible due to site conditions.																														
SD051	0861_SD051_221020	20/10/2022	EB2231197	0.0125	<0.0002	<0.0002	0.0015	<0.0002	0.011	0.001	<0.001	0.0006	0.0007	0.0005	0.0003	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0005	0.0003	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0161
SD052	0861_SD052_221019	19/10/2022	EB2231197	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD053	0861_SD053_221024	24/10/2022	EB2231825	0.0104	<0.0002	<0.0002	0.0013	<0.0002	0.0091	<0.0002	<0.001	<0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0111
SD056	0861_SD056_221021	21/10/2022	EB2231197	0.748	0.0123	0.0327	0.418	<0.0042	0.33	<0.0032	<0.004	0.0144	0.0605	0.0278	0.0191	0.0017	0.0016	0.0016	<0.0008	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.92
SD059	0861_SD059_221021	21/10/2022	EB2231197	1.1	0.0064	0.0067	0.0751	0.011	1.02	0.0299	0.005	<0.0005	0.0178	0.0059	0.0156	0.0043	0.0048	0.0068	0.0059	0.001	<0.0012	0.0014	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.001	<0.0005	<0.0005	1.22
SD064	0861_SD064_221024	24/10/2022	EB2231825	0.313	0.0016	0.002	0.0201	0.0023	0.293	0.0041	<0.002	<0.0005	0.0016	<0.0005	0.0007	<0.0005	<0.0005	<0.0005	0.0015	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.327
SD067	0861_SD067_221024	24/10/2022	EB2231825	0.576	0.0037	0.0043	0.0481	0.0037	0.528	0.0197	0.002	0.005	0.0136	0.0015	0.0026	0.0018	0.0034	0.0061	0.01	0.0024	<0.0012	0.0014	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	0.657
SD076	Not sampled: Not accessible as located in an exclsion zone for construction works.																														
SD079	0861_SD079_221024	24/10/2022	EB2231825	0.282	<0.0005	0.0009	0.0199	0.003	0.262	0.004	<0.002	0.0008	0.0015	<0.0005	0.0015	<0.0005	<0.0005	0.0009	0.0007	<0.0005	<0.0012	0.0006	<0.0012	<0.0005	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005	<0.0005	<0.0005	0.296
SD080	0861_SD080_221024	24/10/2022	EB2231825	0.667	0.0028	0.0056	0.0704	0.0089	0.597	0.0127	<0.005	0.0038	0.0078	0.0043	0.01	0.0146	0.0148	0.0189	0.0199	0.0097	0.0053	0.0068	<0.0025	<0.001	<0.0025	<0.0025	<0.001	<0.0025	<0.001	0.0021	0.0047	<0.001	0.82
SD088	0861_SD088_221019	19/10/2022	EB2231197	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.01	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.005	<0.002	<0.005	<0.002	<0.005	<0.005	<0.002	<0.005	<0.002	<0.002	<0.002	<0.002
SD089	0861_SD089_221019	19/10/2022	EB2231197	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002
SD090	0861_SD090_221021	21/10/2022	EB2231197	0.0015	<0.0002	<0.0002	<0.0002	<0.0002	0.0015	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0018
SD091	0861_SD091_221021	21/10/2022	EB2231197	0.001	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0013
SD094	0861_SD094_221019	19/10/2022	EB2231197	0.0011	<0.0002	<0.0002	<0.0002	<0.0002	0.0011	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0011
SD098	0861_SD098_221020	20/10/2022	EB2231202	0.0022	<0.0002	<0.0002	<0.0002	<0.0002	0.0022	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0022
SD099	0861_SD099_221020	20/10/2022	EB2231197	0.0056	<0.0002	<0.0002	0.0014	<0.0002	0.0042	0.0012	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0068
SD100	0861_SD100_221020	20/10/2022	EB2231197	0.0061	<0.0002	<0.0002	0.0003	<0.0002	0.0058	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0061

LOR is limit of reporting
mg/kg is milligrams per kilogram
µg/kg is micrograms per kilogram
'-' denotes no analysis undertaken
'<' denotes concentration is less than

Appendix C

Analytical Data Validation

Appendix C Analytical Data Validation

DATA VALIDATION REPORT

Project No.:	60612563	**Validation by:** SD	**Date:** 22/11/2022
Client:	Department of Defence		
Site:	Royal Australian Airforce Base, Amberley		
Matrix type:	Groundwater, surface water, sediment	**Data verified by:** JP	**Date:** 24/11/2022
No. of primary samples:	38 groundwater, 45 surface water, 45 sediment		
Laboratory:	ALS (Brisbane), NMI (Sydney)	**Project Manager:** JP	
Lab reference:	EB2231197, EB2231202, EB2231825, EB2231850, EB2233627, EB2233631, AECO06_221025, AECO06_221102, AECO06_221115		

Key Issues:	No key QA/QC issues were identified in the field or laboratory datasets that could have a material implication on data interpretation and therefore decision-making on the project. The data are considered appropriate for use to meet the project objectives.

Field QA/QC

Sampling personnel	Sampling was conducted by AECOM environmental scientists between 18 October and 9 November 2022.
Sampling Methodology	Samples were collected using appropriate methods as identified within the main body of the report and as presented in the SAQP. Field parameters were measured using a water quality meter prior to sample collection. The probe on the water quality meter was decontaminated prior to use. The SAQP does not specify whether field parameters should be collected before or after sample collection. The method used is not expected to impact sample collection.
Chain of Custody	COC documents completed as per AECOM procedures. Two samples (SD009 and SW028) listed on the COC for EB2231197 were booked in by the analytical laboratory (ALS) sample receipt, however, they were not included on the sample receipt notification. The laboratory has advised that these samples were not received so it appears these samples were lost during the transportation process.
Rinsate Blank	Rinsate blank samples were collected at a frequency of one per day of sampling where appropriate (eight in total) during the monitoring between 18 October to 9 November 2022. Rinsates were collected from the decontaminated interface probe. Concentrations reported below the LOR for all analytes tested. See Table C1.
Field Blanks	Field blank samples were collected at a frequency of one per day of sampling (eight in total between 18 October to 9 November 2022) by filling sample containers with laboratory supplied deionised water in the field. All field blanks reported concentrations below the LOR for the analytes tested. See Table C1.
Trip Blanks	Trip blank samples were present during the transport of samples during the sampling between 18 October to 9 November 2022 for the primary laboratory samples. Four soil trip blanks all reported concentrations below the LOR, see Table C2. The number of blanks is lower than the target frequency in the SAQP (one per batch). There were six batches in total. Additional trip blank were supplied to the laboratory, unfortunately they could not be analysed for PFAS as the incorrect type of blanks had been supplied by the laboratory. This minor non-compliance is not expected to impact data quality as PFAS are not volatile compounds and are unlikely to volatise during sample transport.

Frequency of field QC	Field duplicate (inter-laboratory duplicates) and triplicates (inter-laboratory duplicates) were collected. There were five duplicates/triplicate sets each for groundwater, surface water and sediment (see Tables C3, C4 and C5). The frequency of field QC achieves the expected frequency for each media type. The target frequency of one in ten primary samples was achieved for all matrices.
Handling and preservation	Primary, duplicate and triplicate samples were received preserved and chilled at the laboratory. All samples were received at the laboratory in appropriate sample containers with no sample container non-compliances noted.
Laboratory QA/QC	
Tests requested/reported	Samples were analysed and reported as requested on the COC.
Holding time compliance	Samples were extracted and analysed within recommended holding times.
Laboratory Accreditation	The laboratory analysis was conducted by ALS Environmental Pty Ltd (Brisbane) a National Association of Testing Authorities (NATA) accredited laboratory. The triplicate samples were analysed at the National Measurement Institute (Sydney), also a NATA accredited laboratory.
Frequency of laboratory QC	The laboratory reported a sufficient frequency of quality control samples to assess whether the results have been reported to an acceptable accuracy and precision, except: • EB2231197 - laboratory duplicates (water) for PFAS (7.55%) which is below the expected rate of 10.00% (53 samples in batch). • EB2231202 - matrix spikes and laboratory duplicates (water) for PFAS (both 0.00%) which is below the expected rate of 5.0% (for matrix spikes) and 10.00% (duplicates) (20 samples in batch). • EB2231850 - laboratory duplicates (water) for PFAS (5.88%) which is below the expected rate of 10.00% (17 samples in batch).Matrix spikes (water) for PFAS (0.00%) which is below the expected rate of 5.0% (1 sample in batch). The reason for insufficient matrix spikes and laboratory duplicates for these batches is due to the way the laboratory assigns the duplicates and matrix spikes and the availability of additional bottles. The laboratory LIMS assigns laboratory QC to samples in the analytical run; however, the runs may not allocate samples to allow for frequency compliance. However, as all other laboratory QC results met control limits this is not expected to impact data quality.
Method Blank	No method blank non-compliances were reported.
Laboratory duplicate RPDs	Laboratory duplicate Relative Percentage Differences (RPD) were within control limits for all samples with the exception of the following: • EB2231197 – RPDs exceeded the LOR based limits (0-20%) in one sediment sample, 0861_SD059_221021, for PFHxS (20.1%), PFHpS (37.3%), PFOS (29.7%) and PFDS (52.3%). PFOS exceeded the LOR based limits in an anonymous sample (EM2220638-015) for PFOS (29.7%). • EB2231825 – RPDs exceeded the LOR based limits in a soil sample, 0861_QC194_251025 for PFHxS (75.2%), PFOS (52.8%), PFDS (118%), PFHxA (77%), PFOA (82.2%) and FOSA (100%). The laboratory reported that the samples 0861_SD059_221021, EM2220638-015 and 0861_QC194_221025 showed poor duplicate results due to sample heterogeneity, which was confirmed by visual inspection. These results are not expected to impact data quality.
Laboratory control spike recovery	All Laboratory Control Spikes (LCS) recoveries (where reported) were within control limits, except: • EB2231197 (soil) and EB2231850 (water): LCS recovery for EtFOSA and EtFOSAA were greater than the upper control limit.

	LCS are known, interference free matrix spiked with target analytes or certified reference material. The purpose of this quality control type is to monitor precision and accuracy independent of sample matrix and to indicate if the analytical procedure is in control and evaluates the laboratory capability to report unbiased results. Although some non-conformances have been detected in a small number QC samples, the non-conformances do not include the key analytes, PFHxS and PFOS so the understanding of the concentrations of these compounds is not impacted.
Matrix spike recovery	All matrix spike (MS) recoveries (where reported) were within control limits, except: • EB2231197 (water): MS recovery for PFOS in 0861_SW005_221018 was not determined. This indicates that matrix interference may have occurred in the sample from SW005. Review of the results for SW005 did not indicate anomalies. This non-conformance is not expected to impact data quality.
Surrogate spike recovery	Surrogate spike recoveries were within control limits for all samples.
QA/QC Data Evaluation	
Comparison of Field Observations and Laboratory Results	No anomalous results between field observations and analysis results were noted.
Data transcription	A random 10% check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by AECOM.
Limits of reporting	Limits of Reporting (LORs) were sufficiently low to enable assessment against adopted screening levels except for PFOS for NEMP (HEPA, 2020) ecological guideline values for the 99% protection of freshwater species. The potential exists for concentrations of PFOS to be above the adopted guideline, but below the laboratory LOR. This should be taken into consideration when interpreting and using this data quantitatively where results are reported below LOR. LORs for the primary and duplicate samples from MW044 were raised due to matrix interference. The results for the triplicate sample, analysed by NMI, were used in replacement.
Field QA/QC RPDs	RPDs for groundwater, surface water and sediment samples are reported in Tables C3, C4 and C5 respectively. Field duplicate and triplicate RPDs were reported within control limits for all groundwater, surface water and sediment samples except the following (the sample with the higher concentration is in bold). • 0861_SD049_221019 and **0861_QC286_221018** for PFOS (146%), • **0861_SD041_221020** and 0861_QC188_221020 for PFPeS (92%) and PFHxS (84%), • 0861_SD041_221020 and **0861_QC188_221020** for PFOS (65%), • 0861_SD056_221021 and **0861_QC288_221021** for PFOS (44%), • 0861_SD033_221025 and **0861_QC194_221025** for PFOS (44%), • 0861_MW022_221109 and **0861_QC298_221109** for PFPeS (33%) and PFHxA (56%) • 0861_SW005_221018 and **0861_QC282_220328** for PFHxS (49%) and PFOS (62%) • 0861_SW041_221020 and **0861_QC289_221020** for PFHxS (40%), PFOS (40%) and PFHxA (58%) • 0861_SW056_221021 and **0861_QC291_221021** for PFBS (46%), PFPeS (62%), PFHxS (51%), PFOS (49%), PFHxA (65%), PFOA (58%). The RPD non-conformances are likely to be due to lack of mixing of samples, different extraction techniques used by the primary and secondary laboratories and heterogeneity in the solid samples. Where the QC samples highlighted above reported a higher concentration than the primary sample, the higher QC sample concentrations do not constitute a first-time detection of PFOA or PFHxS+PFOS or a new maximum of the same concentrations except for:

	• 0861_SD056_221021 and **0861_QC190_221021** where a new maximum of PFOA (0.0246 µg/L) was reported in both samples, with the duplicate sample reporting the higher concentration. Therefore, the elevated RPDs are not considered to affect data interpretation for use in this report. The higher concentration has however conservatively been adopted in the report tables. All remaining samples reported within the control limits.
Other	
Other observations	No other key observations were identified in the field or laboratory datasets that could have a material implication on data interpretation and therefore decision-making on the project.

Table C1 Field Blank and Rinsate Blank Analytical Results

	Lab Report	EB2231197	RN1370747	EB2231197	EB2231202	EB2231825	EB2231825	EB2231825	EB2233631	EB2231197	EB2231197	EB2231197	EB2231197	EB2231825	EB2231825	EB2231825	E2233631
	Field ID	0861_QC459_221018	0861_QC460_221019	0861_QC461_221020	0861_QC462_221021	0861_QC463_221024	0861_QC464_221025	0861_QC465_221026	0861_QC466_221109	0861_QC354_221018	0861_QC355_221020	0861_QC356_221020	0861_QC357_221021	0861_QC358_221024	0861_QC359_221025	0861_QC360_221026	0861_QC361_221009
	Sampled Date	18/10/2022	19/10/2022	20/10/2022	21/10/2022	24/10/2022	25/10/2022	26/10/2022	9/11/2022	18/10/2022	19/10/2022	20/10/2022	21/10/2022	24/10/2022	25/10/2022	26/10/2022	9/11/2022
	Sample Type	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate
Analyte	**Units**	**EQL**															
PFBS	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFPeS	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHxS	µg/L	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFHpS	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFOS	µg/L	0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFDS	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFBA	µg/L	0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
PFPeA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHxA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHpA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFOA	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFNA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFDA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFUnDA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFDoDA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFTrDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFTeDA	µg/L	0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
FOSA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MeFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EtFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MeFOSA	µg/L	0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EtFOSA	µg/L	0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MFOSAA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
EtFOSAA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
4:2 FTS	µg/L	0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 FtS	µg/L	0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 FTS	µg/L	0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 FTS	µg/L	0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Table C2 Trip Blank Analytical Results

Lab Report Number	EB2231197	EB2231197	EB2231197	EB2231202
Field ID	0861_QC531_221021	0861_QC527_221018	0861_QC529_221020	0861_QC531_221021
Sampled Date	21/10/2022	18/10/2022	20/10/2022	21/10/2022
Sample Type	Trip Blank (Soil)	Trip Blank (Soil)	Trip Blank (Soil)	Trip Blank (Soil)

Analyte	Units	EQL				
10:2 FTS	mg/kg	0.0005	<0.0005	<0.0005	<0.0005	<0.0005
4:2 FTS	mg/kg	0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 FtS	mg/kg	0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 FTS	mg/kg	0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EtFOSA	mg/kg	0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EtFOSAA	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EtFOSE	mg/kg	0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MeFOSA	mg/kg	0.0005	<0.0005	<0.0005	<0.0005	<0.0005
MFOSAA	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
MeFOSE	mg/kg	0.0005	<0.0005	<0.0005	<0.0005	<0.0005
PFBS	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
PFBA	mg/kg	0.001	<0.001	<0.001	<0.001	<0.001
PFDS	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
PFDA	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
PFDoDA	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
PFHpS	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
PFHpA	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
PFHxA	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
PFNA	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
FOSA	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
PFPeS	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
PFPeA	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
PFTeDA	mg/kg	0.0005	<0.0005	<0.0005	<0.0005	<0.0005
PFTrDA	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
PFUnDA	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sum of PFAS	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sum of PFHxS and PFOS	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
PFOS	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
PFOA	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
PFHxS	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Table C3 Groundwater Duplicate and Triplicate Analytical Results

		Lab Report Number	EB2231825	EB2231825	RPD	RN1371573	RPD	EB2231825	EB2231825	RPD	RN1371573	RPD	EB2231825	EB2231825	RPD	RN1371573	RPD	EB2231825	EB2231825	RPD	RN1371573	RPD
		Field ID	0861_MW012_221024	0861_QC192_221024		0861_QC292_221024		0861_MW036_221025	0861_QC193_221025		0861_QC293_221025		0861_MW043_221025	0861_QC196_221025		0861_QC196_221025		0861_MW044_221026	0861_QC197_221026		0861_QC297_221026	
		Sampled Date	24/10/2022	24/10/2022		24/10/2022		25/10/2022	25/10/2022		25/10/2022		25/10/2022	25/10/2022		25/10/2022		26/10/2022	26/10/2022		26/10/2022	
		Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Analyte	**Units**	**EQL**																				
PFBS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	0.04	0.06	40	<0.01	120	<0.25	<0.25	0	<0.01	0
PFPeS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	0.012	NC	<0.25	<0.25	0	<0.01	0
PFHxS	µg/L	0.01	<0.01	<0.01	0	<0.01	0	0.04	0.04	0	0.03	29	0.05	0.08	46	0.047	6	<0.25	<0.25	0	<0.01	0
PFHpS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25	<0.25	0	<0.01	0
PFOS	µg/L	0.01 : 0.02 (Interlab)	0.06	0.04	40	0.034	55	<0.01	<0.01	0	<0.02	0	0.05	0.06	18	0.043	15	<0.25	<0.25	0	<0.02	0
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25	<0.25	0	<0.01	0
PFBA	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<1.2	<1.2	0	<0.05	0
PFPeA	µg/L	0.02	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.25	<0.25	0	<0.02	0
PFHxA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	0.02	0	<0.25	<0.25	0	<0.01	0
PFHpA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25	<0.25	0	<0.01	0
PFOA	µg/L	0.01	<0.01	<0.01	0	<0.01	0	<0.01	<0.01	0	<0.01	0	<0.01	<0.01	0	<0.01	0	<0.25	<0.25	0	<0.01	0
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25	<0.25	0	<0.01	0
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25	<0.25	0	<0.01	0
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25	<0.25	0	<0.01	0
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25	<0.25	0	<0.01	0
PFTrDA	µg/L	0.02	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.25	<0.25	0	<0.02	0
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.63	<0.05	0	<0.02	0
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25	<0.02	0	<0.01	0
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.63	<0.05	0	<0.02	0
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.63	<0.05	0	<0.02	0
MeFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.63	<0.05	0	<0.05	0
EtFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.63	<0.05	0	<0.05	0
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25	<0.02	0	<0.01	0
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25	<0.02	0	<0.01	0
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.25	<0.05	0	<0.01	0
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.25	<0.05	0	<0.01	0
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.25	<0.05	0	<0.01	0
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.25	<0.05	0	<0.01	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory
NC is not calculable

Table C3 Groundwater Duplicate and Triplicate Analytical Results

		Lab Report Number	EB2233631	EB2233631	RPD	RN1373013	RPD
		Field ID	0861_MW022_221109	0861_QC198_221109		0861_QC298_221109	
		Sampled Date	9/11/2022	9/11/2022		9/11/2022	
		Sample Type	Primary	Duplicate		Triplicate	
Analyte	**Units**	**EQL**					
PFBS	µg/L	0.02 : 0.01 (Interlab)	0.18	0.18	0	0.13	32
PFPeS	µg/L	0.02 : 0.01 (Interlab)	0.21	0.22	5	0.15	33
PFHxS	µg/L	0.01	1.42	1.53	7	1.1	25
PFHpS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
PFOS	µg/L	0.01 : 0.02 (Interlab)	0.12	0.11	7	0.071	53
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
PFBA	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	0.067	NC
PFPeA	µg/L	0.02	0.04	0.04	0	0.025	46
PFHxA	µg/L	0.02 : 0.01 (Interlab)	0.23	0.21	9	0.13	56
PFHpA	µg/L	0.02 : 0.01 (Interlab)	0.02	0.02	0	0.018	11
PFOA	µg/L	0.01	0.04	0.03	29	<0.01	0
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
PFTrDA	µg/L	0.02	<0.02	<0.02	0	<0.02	0
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0
MeFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0
EtFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0

Table C4 Surface Water Duplicate and Triplicate Analytical Results

		Lab Report Number	EB2231197	EB2231197	RPD	RN1370747	RPD	EB2231197	EB2231197	RPD	RN1370747	RPD	EB2231197	EB2231197	RPD	EB2231197	RPD	EB2231197	EB2231197	RPD	RN1370747	RPD	EB2231197
		Field ID	0861_SW005_221018	0861_QC182_221018		0861_QC282_220328		0861_SW020_221018	0861_QC185_221018		0861_QC285_221018		0861_SW049_221019	0861_QC187_221019		0861_QC287_221019		0861_SW041_221020	0861_QC189_221020		0861_QC289_221020		0861_SW056_221021
		Sampled Date	18/10/2022	18/10/2022		18/10/2022		18/10/2022	18/10/2022		18/10/2022		19/10/2022	19/10/2022		19/10/2022		20/10/2022	20/10/2022		20/10/2022		21/10/2022
		Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Duplicate		Primary	Duplicate		Triplicate		Primary
Analyte	**Units**	**EQL**																					
PFBS	µg/L	0.02 : 0.01 (Interlab)	0.09	0.09	0	0.051	55	<0.02	<0.02	0	<0.01	0	0.03	0.03	0	0.03	0	0.08	0.1	22	0.062	25	0.35
PFPeS	µg/L	0.02 : 0.01 (Interlab)	0.07	0.07	0	0.037	62	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.02	0	0.1	0.1	0	0.061	48	0.36
PFHxS	µg/L	0.01	0.51	0.5	2	0.31	49	<0.01	<0.01	0	<0.01	0	0.19	0.17	11	0.17	11	0.78	0.79	1	0.52	40	2.69
PFHpS	µg/L	0.02 : 0.01 (Interlab)	0.03	0.03	0	<0.01	100	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.02	0	0.04	0.06	40	0.02	67	0.1
PFOS	µg/L	0.01 : 0.02 (Interlab)	1.23	1.26	2	0.65	62	<0.01	<0.01	0	<0.02	0	0.47	0.46	2	0.44	7	1	1.11	10	0.67	40	2.31
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.01	0	<0.02
PFBA	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.1	0	<0.1	<0.1	0	0.1	0	0.1
PFPeA	µg/L	0.02	0.04	0.04	0	<0.02	67	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	0.04	0.05	22	0.033	19	0.32
PFHxA	µg/L	0.02 : 0.01 (Interlab)	0.13	0.13	0	0.061	72	<0.02	<0.02	0	<0.01	0	0.06	0.07	15	0.08	29	0.2	0.21	5	0.11	58	0.88
PFHpA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.02	0	0.02	0.02	0	0.014	35	0.18
PFOA	µg/L	0.01	0.03	0.03	0	0.017	55	<0.01	<0.01	0	<0.01	0	<0.01	<0.01	0	<0.01	0	0.05	0.05	0	0.032	44	0.2
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.01	0	<0.02
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.01	0	<0.02
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.01	0	<0.02
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.01	0	<0.02
PFHxA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.01	0	<0.02
PFTrDA	µg/L	0.02	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.02	0	<0.05
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.01	0	<0.02
MeFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05
EtFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.02	0	<0.05
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.02	0	<0.05
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.01	0	<0.02
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.01	0	<0.02
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.01	0	<0.05
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.01	0	0.06
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.01	0	<0.05
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.01	0	<0.05

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory
NC is not calculable

Table C4 Surface Water Duplicate and Triplicate Analytical Results

		Lab Report Number	EB2231197	RPD	RN1370747	RPD
		Field ID	0861_QC191_221021		0861_QC291_221021	
		Sampled Date	21/10/2022		21/10/2022	
		Sample Type	Duplicate		Triplicate	
Analyte	**Units**	**EQL**				
PFBS	µg/L	0.02 : 0.01 (Interlab)	0.34	3	0.22	46
PFPeS	µg/L	0.02 : 0.01 (Interlab)	0.35	3	0.19	62
PFHxS	µg/L	0.01	2.51	7	1.6	51
PFHpS	µg/L	0.02 : 0.01 (Interlab)	0.1	0	0.04	86
PFOS	µg/L	0.01 : 0.02 (Interlab)	2.34	1	1.4	49
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	0	<0.01	0
PFBA	µg/L	0.1 : 0.05 (Interlab)	0.1	0	0.093	7
PFPeA	µg/L	0.02	0.32	0	0.21	42
PFHxA	µg/L	0.02 : 0.01 (Interlab)	0.89	1	0.45	65
PFHpA	µg/L	0.02 : 0.01 (Interlab)	0.18	0	0.096	61
PFOA	µg/L	0.01	0.2	0	0.11	58
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	0	<0.01	0
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	0	<0.01	0
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	0	<0.01	0
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	0	<0.01	0
PFHxA	µg/L	0.02 : 0.01 (Interlab)	<0.02	0	<0.01	0
PFTrDA	µg/L	0.02	<0.02	0	<0.02	0
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	0	<0.02	0
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	0	<0.01	0
MeFOSE	µg/L	0.05	<0.05	0	<0.05	0
EtFOSE	µg/L	0.05	<0.05	0	<0.05	0
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	0	<0.02	0
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	0	<0.02	0
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	0	<0.01	0
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	0	<0.01	0
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	0	<0.01	0
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	0.06	0	0.036	50
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	0	<0.01	0
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	0	<0.01	0

Table C5 Sediment Duplicate and Triplicate Analytical Results

		Lab Report Number	EB2231197	EB2231197		RN1370747		EB2231197	EB2231197		RN1370747		EB2231197	EB2231197		RN1370747		EB2231197	EB2231197		RN1370747		EB2231825
		Field ID	0861_SD005_221018	0861_QC183_221018	RPD	0861_QC283_221018	RPD	0861_SD049_221019	0861_QC186_221019	RPD	0861_QC286_221019	RPD	0861_SD041_221021	0861_QC188_221021	RPD	0861_QC288_221020	RPD	0861_SD056_221021	0861_QC190_221021	RPD	0861_QC288_221021	RPD	0861_SD033_221025
		Sampled Date	18/10/2022	18/10/2022		18/10/2022		19/10/2022	19/10/2022		19/10/2022		20/10/2022	20/10/2022		20/10/2022		21/10/2022	21/10/2022		10/10/2022		25/10/2022
		Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary
Analyte	**Units**	**EQL**																					
PFBS	mg/kg	0.001 : 0.001 (Interlab)	<0.001	<0.001	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	0.0023	0.0021	9	<0.005	NC	0.0123	0.0161	27	0.0067	59	0.0005
PFPeS	mg/kg	0.001 : 0.001 (Interlab)	<0.001	<0.001	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	0.0122	0.0045	**92**	0.0097	23	0.0327	0.0291	12	0.017	63	0.0009
PFHxS	mg/kg	0.001 : 0.001 (Interlab)	0.0049	0.0030	48	0.0045	9	0.0004	0.0003	29	<0.001	NC	0.0746	0.0306	**84**	0.1	29	0.418	0.426	2	0.34	21	0.0138
PFHpS	mg/kg	0.001 : 0.001 (Interlab)	<0.001	<0.001	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	0.0061	0.0037	49	0.0078	24	<0.0042	0.0049	15	0.0016	NC	0.0009
PFOS	mg/kg	0.001 : 0.001 (Interlab)	0.113	0.131	15	0.12	6	0.0104	0.0135	26	0.067	**146**	0.291	0.23	23	0.57	**65**	0.330	0.372	12	0.21	**44**	0.207
PFDS	mg/kg	0.0002	<0.001	<0.001	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	0.005	0.0044	13	<0.005	0	<0.0032	0.0044	32	<0.001	0	0.0145
PFBA	mg/kg	0.001	<0.005	<0.005	0	<0.002	0	<0.001	<0.001	0	<0.002	0	<0.001	<0.001	0	<0.005	0	<0.004	0.007	55	0.0041	0	<0.001
PFPeA	mg/kg	0.001 : 0.001 (Interlab)	<0.001	<0.001	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	0.0006	<0.0006	0	<0.005	0	0.0144	0.0158	9	0.0085	52	0.0012
PFHxA	mg/kg	0.001 : 0.001 (Interlab)	<0.001	<0.001	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	0.0057	0.0037	43	<0.005	0	0.0605	0.0638	5	0.031	67	0.0043
PFHpA	mg/kg	0.001 : 0.001 (Interlab)	<0.001	<0.001	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	0.0012	<0.0006	0	<0.005	0	0.0278	0.0292	5	0.017	48	0.0006
PFOA	mg/kg	0.001 : 0.001 (Interlab)	<0.001	<0.001	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	0.0027	0.0018	40	<0.005	0	0.0191	0.0246	25	0.012	45	0.0026
PFNA	mg/kg	0.001 : 0.001 (Interlab)	<0.001	<0.001	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.005	0	0.0017	0.0022	26	0.001	51	<0.0002
PFDA	mg/kg	0.001 : 0.001 (Interlab)	<0.001	<0.001	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.005	0	0.0016	0.0028	55	<0.001	0	<0.0002
PFUnDA	mg/kg	0.001 : 0.001 (Interlab)	<0.001	<0.001	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	0.001	0.001	0	<0.005	0	0.0016	0.0025	44	<0.002	0	0.0003
PFDoDA	mg/kg	0.001 : 0.001 (Interlab)	<0.001	<0.001	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	0.0024	0.0025	4	<0.005	0	<0.0008	0.0024	100	<0.002	0	0.0006
PFTrDA	mg/kg	0.001 : 0.001 (Interlab)	<0.001	<0.001	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	0.0003	<0.0002	0	<0.005	0	<0.0005	0.0007	33	<0.002	0	<0.0002
PFTeDA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0025	<0.0026	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0006	<0.0006	0	<0.005	0	<0.0012	<0.0005	0	<0.002	0	<0.0006
FOSA	mg/kg	0.0002 : 0.001 (Interlab)	<0.001	<0.001	0	<0.001	0	<0.0002	<0.0002	0	<0.001	0	0.0013	0.0017	27	<0.005	0	<0.0005	0.0003	NC	<0.001	0	0.0016
MeFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0025	<0.0026	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0006	<0.0006	0	<0.005	0	<0.0012	<0.0005	0	<0.002	0	<0.0006
EtFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0025	<0.0026	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0006	<0.0006	0	<0.005	0	<0.0012	<0.0005	0	<0.002	0	<0.0006
MeFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0025	<0.0026	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0006	<0.0006	0	<0.005	0	<0.0012	<0.0005	0	<0.005	0	<0.0006
EtFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0025	<0.0026	0	<0.005	0	<0.0005	<0.0005	0	<0.005	0	<0.0006	<0.0006	0	<0.005	0	<0.0012	<0.0005	0	<0.005	0	<0.0006
MFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.001	<0.001	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.005	0	<0.0005	<0.0002	0	<0.002	0	<0.0002
EtFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.001	<0.001	0	<0.002	0	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.005	0	<0.0005	<0.0002	0	<0.002	0	<0.0002
4:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.001	<0.001	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.001	0	<0.0005
6:2 FtS	mg/kg	0.0005 : 0.001 (Interlab)	<0.001	<0.001	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.001	0	<0.0005
8:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.001	<0.001	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.001	0	<0.0005
10:2 FTS	mg/kg	0.0005 : 0.002 (Interlab)	<0.001	<0.001	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.002	0	<0.0005

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory
NC is not calculable

Table C5 Sediment Duplicate and Triplicate Analytical Results

		Lab Report Number	EB2231825	RPD	RN1371573	RPD
		Field ID	0861_QC194_221025		0861_QC294_221025	
		Sampled Date	25/10/2022		25/10/2022	
		Sample Type	Duplicate		Triplicate	
Analyte	**Units**	**EQL**				
PFBS	mg/kg	0.001 : 0.001 (Interlab)	0.0003	50	<0.001	NC
PFPeS	mg/kg	0.001 : 0.001 (Interlab)	0.0006	40	<0.001	0
PFHxS	mg/kg	0.001 : 0.001 (Interlab)	0.0063	75	0.013	6
PFHpS	mg/kg	0.001 : 0.001 (Interlab)	0.0004	77	<0.001	0
PFOS	mg/kg	0.001 : 0.001 (Interlab)	0.133	**44**	0.21	1
PFDS	mg/kg	0.0002	0.0063	79	0.006	83
PFBA	mg/kg	0.001	<0.001	0	<0.002	0
PFPeA	mg/kg	0.001 : 0.001 (Interlab)	0.0006	67	<0.002	0
PFHxA	mg/kg	0.001 : 0.001 (Interlab)	0.0022	65	0.0032	29
PFHpA	mg/kg	0.001 : 0.001 (Interlab)	0.0003	67	<0.001	0
PFOA	mg/kg	0.001 : 0.001 (Interlab)	0.0013	67	0.0026	0
PFNA	mg/kg	0.001 : 0.001 (Interlab)	<0.0002	0	<0.001	0
PFDA	mg/kg	0.001 : 0.001 (Interlab)	<0.0002	0	<0.001	0
PFUnDA	mg/kg	0.001 : 0.001 (Interlab)	<0.0002	40	<0.002	0
PFDoDA	mg/kg	0.001 : 0.001 (Interlab)	<0.0002	100	<0.002	0
PFTrDA	mg/kg	0.001 : 0.001 (Interlab)	<0.0002	0	<0.002	0
PFTeDA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	0	<0.002	0
FOSA	mg/kg	0.0002 : 0.001 (Interlab)	0.0008	67	<0.001	0
MeFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	0	<0.002	0
EtFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	0	<0.002	0
MeFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	0	<0.005	0
EtFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	0	<0.005	0
MFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	0	<0.002	0
EtFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	0	<0.002	0
4:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	0	<0.001	0
6:2 FtS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	0	<0.001	0
8:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	0	<0.001	0
10:2 FTS	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	0	<0.002	0

Appendix D

Chain of Custody Forms

Appendix D Chain of Custody Forms

Please report sample ID's as per COCs.

AECOM — **Chain of Custody** — COC Page 1 of 7

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted] **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no. : [redacted]

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	Ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0861_SW088_221019	19.10.22		X							X		
2	0861_SD047_221019	↓			X						X		
3	0861_SW047_221019			X							X		
4	0861_SW094_221019			X							X		
5	0861_SD094_221019				X						X		
6	0861_SW036_221019			X							X		
7	0861_SD036_221019	↓			X						X		
—	~~0861_SD088_221020~~	~~20/10/22~~											
—	~~0861_SW088_221020~~												
—	~~0861_SW026_221020~~												
—	~~0861_SD026_221020~~												
8	0861_SD041_221020	20.10.22			X						X		
9	0861_SW041_221020	↓		X						8 un	X		Extra volume
10	0861_QC188_221020	↓			X						X		

Environmental Division Brisbane
Work Order Reference
EB2231197

[redacted]

Telephone : +61-7-3243 7222

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by:	[redacted]	Signed:	Date:	Relinquished by:	Signed: Date:
Received by:		Signed:	Date: 21/10 1739	Received by:	Signed: Date:

Please report Sample IDs as per COCs

AECOM

Chain of Custody

COC Page 2 of 7

AECOM Australia Pty Ltd
[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	
6. Report Format: ESdat	7. Project Manage [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
—	0861_QC288_221020	20/10/22			X						X		Forward to MNI
11	0861_QC289_221020			X							X		
—	0861_QC289-221020			X							X		Forward to MNI
12	0861_MW55S_221020			X							X		
13	0861_MW55D_221020			X							X		
—	0861_~~SD043_221020~~										~~X~~		
—	0861_~~SW043_221020~~										~~X~~		
—	0861_~~SD039_221020~~												
—	0861_~~SW039_221020~~												
—	0861_~~SD025_221020~~												
—	0861_~~SW025_221020~~												
14	0861_SW051_221020			X							X		
15	0861_SD051_221020	↓			X						X		
—	0861_												

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**
Temp. received: °C
Report & invoice [redacted]
Lab Report No | Esky ID

Relinquished by:	Signed:	Date:	Relinquished by:	Signed:	Date:
Received by:	Signed:	Date:	Received by:	Signed:	Date:

Please report Sample IDs as per COCs

AECOM

Chain of Custody

COC Page 3 of 7

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By:

Mobile no. :

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
16	0861_SD091-221021	21/10/21			X						X		
17	0861_SW091-221021	/		X							X		
18	0861_SW090_221021	/		X							X		
19	0861_SD090-221021				X						X		
20	0861_SD021_221021				X						X		
21	0861_SW021_221021			X							X		
22	0861_SW037_221021			X							X		
23	0861_SD037_221021				X						X		
24	0861_SW059_221021			X							X		
25	0861_SD059_221021				X						X		
26	0861_SW030_221021			X							X		
27	0861_SD030_221021				X						X		
28	0861_SW002_221021			X							X		
29	0861_SD002_221021				X						X		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoi [redacted]

Lab Report No | Esky ID

Relinquished by:	Signed:	Date:
Received by:	Signed:	Date:
Relinquished by:	Signed:	Date:
Received by:	Signed:	Date:

Please report Sample IDs as per COCs

AECOM — **Chain of Custody** — COC Page 4 of 7

AECOM Australia Pty Ltd
[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
30	0861_SW056_221021	21.10.22		x						8	x		Extra volume
31	0861_SD056_221021	↓			x						x		
32	0861_QC190-221021				x						x		
—	0861_QC290-221021				x						x	x	forward to MNI
33	0861_QC191_221021			x							x		
—	0861_QC291_221021			x							x	x	forward to MNI
36	0861_SW027-221021			x							x		
35	0861_SD027_221021				x						x		
36	0861_SW003_221021			x							x		
37	0861_SD003-221021	↓			x						x		
38	0861_SW099-221020	20.10.22		x							x		
39	0861_SD099_221020	↓			x						x		
60	0861_SD100_221020				x						x		
41	0861_SW100_221020	↓		x							x		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**
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Report & invoice: [redacted]
Lab Report No: Esky ID:

Relinquished by: Signed: Date:
Received by: Signed: Date:
Relinquished by: Signed: Date:
Received by: Signed: Date:

Please report sample IDs per COCs -

AECOM

Chain of Custody

COC Page 5 of 7

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)									HOLD	Notes
42	0861_SD015-221018	18/10/22	X		X					1x unpreserved	X										
43	0861_SW016-221018			X						2x unpreserved	X										
44	0861_SD016-221018		X		X					1x unpreserved	X										
45	0861_SW034-221018			X						2x un	X										
46	0861_SD034-221018				X					1x un	X										
47	0861_SD018_221018			X	X					1x un	X										
48	0861_SW018_221018			X						2x un	X										
49	0861_SD020_221018				X					1x un	X										
50	0861_SW020-221018			X						8x un	X										Extra volume
51	0861_QC354-221018			X							X										
52	0861_QC459_221018			X							X										
53	0861_QC404-221018			X							X										
54	0861_QC284-221018				X						X										
55	0861_QC185_221018	↓		X							X										

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by:	Signed:	Date:	Relinquished by:	Signed:	Date:
Received by:	Signed:	Date:	Received by:	Signed:	Date:

Please report Sample ID's as per COC.

AECOM

Chain of Custody

COC Page 6 of 7

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
56	0861_SW005 - 22 10 18	18.10.22		X						8 un	X		Extra volume
57	0861_SD005 - 22 10 18	↓			X					1 un	X		
58	0861_QC182 - 22 10 18			X						2 un	X		
59	0861_QC183 - 22 10 18				X					1 un	X		
60	0861_QC527 - 22 10 18				X					1 un	X		
—	0861_QC282 - 22 10 18			X						2 un	X		Forward to MNI
—	0861_QC283 - 22 10 18				X					1 un	X		Forward to MNI
61	0861_SW008 - 22 10 18			X						2 un	X		
62	0861_SD008 - 22 10 18				X					1 un	X		
63	0861_SW009 - 22 10 18			X						2 un	X		
64	0861_SD009 - 22 10 18				X					1 un	X		
65	0861_SW004 - 22 10 18			X						2 un	X		
66	0861_SD004 - 22 10 18				X					1 un	X		
67	0861_SW015 - 22 10 18	↓		X						2 un	X		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

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Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by:	Signed:	Date:	Relinquished by:	Signed:	Date:
Received by:	Signed:	Date:	Received by:	Signed:	Date:

Please report Sample ID's as per COCs.

AECOM

Chain of Custody

COC Page 7 of 7

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
—	0861_QC285_221018	18/10/22		X							X		Forward to MNJ
69	0861_~~SD049~~ SD049 - 221019	19/10/22			X						X		
69	0861_SW049 - 221019			X						8 oz cup	X		Extra volume
70	~~0861~~ QC186_221019				X						X		
—	0861_QC286 - 221019				X						X		Forward to NMI
71	0861_QC187 - 221019			X							X		
72	0861_QC287 - 221019			X							X		
—	0861_QC460 - 221019			X							X		Forward to NMI
73	0861_QC529 - 221019			X							X		
74	0861_SD089_221019				X						X		
75	0861_SW089 - 221019			X							X		
76	0861_SW052 - 221019			X							X		
77	0861_SD052 - 221019				X						X		
78	0861_SW088 - 221019			X							X		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**
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Report & invoice: [redacted]
Lab Report No: Esky ID:

Relinquished by:	Signed:	Date:	Relinquished by:	Signed:	Date:
Received by:	Signed:	Date:	Received by:	Signed:	Date:

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Please report Sample IDs as per COCs

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Chain of Custody

COC Page 1 of 2

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By [redacted]
Mobile no. :

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 6.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0861_SD043 - 221020	20.10.22			X						X		
2	0861_SW043 - 221020	↓		X							X		
3	0861_SD039_221020				X						X		
4	0861_SW039_221020			X							X		
5	0861_SD025_221020				X						X		
6	0861_SW025_221020			X							X		
7	0861_QC532_221021	21/10/21		X							X		
8	0861_QC531_221021	↓			X						X		
9	0861_QC462_221021			X							X		
10	0861_QC357_221021			X							X		
	0861_												
	0861_												
	0861_												
	0861_												

Environmental Division
Brisbane
Work Order Reference
EB2231202

Telephone : +61-7-3243 7222

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Lab Report No | Esky ID

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Received by: [redacted]	Signed:	Date: 21/10 1739	Received by:	Signed:	Date:

Please report Sample IDs as per COCs.

AECOM

Chain of Custody

COC Page 2 of 2

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. : [redacted]

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: fil'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
11	0861_SD098_221020	20/10/22			X					1 unp	X		
12	0861_SW098_221020			X						2 unp	X		
13	0861_SD026_221020				X						X		
14	0861_SW026_221020			X							X		
—	~~0861_SW099_221020~~			X							X		
—	~~0861_SD099_221020~~				X						X		
—	~~0861_SD100_221020~~				X						X		
—	~~0861_SW100_221020~~			X							X		
15	0861_SD040_221020				X						X		
16	0861_SW040_221020			X							X		
17	0861_SW045_221020			X							X		
18	0861_SD045_221020				X						X		
—	0861_~~SW051~~_221020			X									
—	0861_~~SD051~~_221020				X								

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Report & invoice [redacted]

Lab Report No: Esky ID:

Relinquished by:	Signed:	Date:	Relinquished by:	Signed:	Date:
Received by:	Signed:	Date:	Received by:	Signed:	Date:

AECOM

Chain of Custody

Sample IDs as per CoC

COC Page 1 of 5

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. : [redacted]

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Environmental Division Brisbane
Work Order Reference
EB2231825

Telephone : +61-7-3243 7222

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis: EP231X (PFAS Std 28)	HOLD
1	0861_SD053-221024	24.10.22			Y					1	Y	
2	0861_SW053-221024			Y						2	Y	
3	0861_SD064-221024				Y					1	Y	
4	0861_SW064-221024			Y						2	Y	
5	0861_SD038-221024				Y					1	Y	
6	0861_SW038-221024			Y						2	Y	
7	0861_SD079-221024				Y					1	Y	
8	0861_SW079-221024			Y						2	Y	
9	0861_SD080_221024				Y					1	Y	
10	0861_SW080_221024			Y						2	Y	
11	0861_SD067-221024				Y					1	Y	
12	0861_SW067_221024			Y						2	Y	
13	0861_MW012_221024			Y						8	Y	
14	0861_QC192_221024			Y						2	Y	

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

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Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by:		Signed:	Date:	Relinquished by:	Signed: Date:
Received by: SP	27/10/22 0935	Signed:	Date:	Received by:	Signed: Date:

AECOM

Chain of Custody

Sample IDs as per CoC

COC Page 2 of 5

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By: [redacted]

Mobile no. : [redacted]

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	Analysis Request: HOLD	Notes
14	0861_QC292_221024	24-10-22		X						2	Y		Forward to MNI
15	0861_MW026_221024			X						2	Y		
16	0861_MW037_221024			X						2	Y		
17	0861_MW032_221024			X						2	Y		
18	0861_MW050_221024			X						2	X		
19	0861_MW005_221024			Y						2	Y		
20	0861_QC358_221024			Y						2	X		
21	0861_QC463_221024			Y						2	X		
22	0861_MW025_221024			X						2	Y		
23	0861_QC533_221024			Y						2	X		
24	0861_QC534_221024				X					1	X		
25	0861_QC193_221025	25-10-22		X						2	X		
—	0861_QC293_221025			X						2	Y		Forward to MNI
26	0861_MW036_221025			X						8	X		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

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Report & invoice [redacted]

Lab Report No | Esky ID

Relinquished by: Signed: Date:

Received by: SP 27/10/22 0935 Signed: Date:

Relinquished by: Signed: Date:

Received by: Signed: Date:

SAMPLE IDS AS PER CoC

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Chain of Custody

COC Page 3 of 5

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. :

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
27	0861_MW049-221025	25.10.22		X						2	Y		
28	0861_MW048-221025			Y						2	Y		
29	0861_MW047-221025			Y						2	Y		
30	0861_MW020-221025			X						2	Y		
31	0861_MW309-221025			Y						2	Y		
32	0861_MW046-221025			Y						2	Y		
33	0861_MW041-221025			X						2	Y		
34	0861_SD033-221025				X					1	X		
35	0861_QC194-221025				X					1	X		
—	0861_QC294-221025				X					1	Y		forward to MNJ
36	0861_SW033-221025			X						8	Y		
37	0861_QC195-221025			X						2	Y		
—	0861_QC295-221025			Y						2	Y		forward to MNJ
38	0861_MW043-221025	↓		Y						8	Y		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by:		Signed:	Date:	Relinquished by:	Signed: Date:
Received by:	SF 31/10/22 0935	Signed:	Date:	Received by:	Signed: Date:

AECOM

Chain of Custody — Sample IDs as per COC — COC Page 4 of 5

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. : [redacted]

Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
39	0861_QC196_221025	25.10.22		X						2	X		
——	0861_QC296_221025			X						2	X		Forward to MNI
40	0861_MW031_221025			X						2	X		
41	0861_MW030_221025			X						2	X		
42	0861_QC359_221025			X						2	X		
43	0861_QC464_221025			X						2	X		
44	0861_SD008_221026	26.10.22			X					1	X		
45	0861_SW008_221026			X						2	X		
46	0861_MW028_221026			X						2	X		
47	0861_MW029_221026			X						2	X		
48	0861_MW044_221026			X						8	X		
49	0861_QC197_221026			X						2	X		
——	0861_QC297_221026			X						2	X		Forward to MNI
50	0861_MW023_221026			X						2	X		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME
Temp. received: °C
Report & invoice: [redacted]
Lab Report No: Esky ID:

Relinquished by:		Signed:	Date:	Relinquished by:	Signed: Date:
Received by:	SP 27/10/22 0935	Signed:	Date:	Received by:	Signed: Date:

AECOM

Chain of Custody — sample IDs as per CoC — COC Page 5 of 5

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. : [redacted]

Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
51	0861_MW006-221026	26-10-22		Y						2	Y		
52	0861_MW007-221026	↓		Y						2	Y		
53	0861_MW002-221026			Y						2	Y		
54	0861_MW042-221026			Y						2	Y		
55	0861_MW037-221026			Y						2	Y		
56	0861_MW021-221026			Y						2	Y		
57	0861_MW024-221026	↓		Y						2	Y		
58	0861_QC 360-221026									2	Y		
59	0861_QC 465-221026	↓								2	Y		[redacted]
	0861_ [redacted]	[redacted]								—	Y		
	0861_ [redacted]	↓								—	Y		
60	0861_QC535-221025	25-10-22								1	Y		
61	0861_QC536-221025									2	Y		
	0861_												

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by:		Signed:	Date:	Relinquished by:	Signed: Date:
Received by: SP	27/10/22 0935	Signed:	Date:	Received by:	Signed: Date:

OFFSITE

AECOM

Chain of Custody Sample IDs as per CoC

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. : [redacted]

Project Name: QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD
1	0861_MW0575_221026	26-10-22		✓						2	✓	
2.	0861_MW0571_221026	↓		✓						2	✓	
	0861_											
	0861_											
	0861_											
	0861_											
	0861_											
	0861_											
	0861_											
	0861_											
	0861_											
	0861_											
	0861_											

Environmental Division
Brisbane
Work Order Reference
EB2231850

Telephone : +61-7-3243 7222

SCANNED

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by:		Signed:	Date:	Relinquished by:	Signed: Date:
Received by:	S 0935	Signed: 27/10/22	Date:	Received by:	Signed: Date:

Please report separately due to landholder property.

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. :

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0861_ MW054D_221109	9/11/22		X				X		2x unpreserved	X		
2	0861_ MW054S_221109	1		X				X		1	X		
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Environmental Division
Brisbane
Work Order Reference
EB2233627

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted] Signed: [redacted] Date: 9/11/22

Received by: [redacted] Signed: [redacted] Date: 9/11/22

Relinquished by: Signed: Date:

Received by: Signed: Date:

1731

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. : [redacted]

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0861_MW034-221109	9/11/22		Y				Y		6 x unpreserved	X		Extra Vol for MS + LD
2	0861_MW022-221109	"		Y				Y		2 x unpreserved	X		
3	0861_QC198	"		Y				Y		"	X		
	0861_QC298	"		X				Y		"	X		Please forward to NMI.
4	0861_MW035-221109	"		X				Y		"	X		
5	0861_QC361	"		X				Y		"	X		
6	0861_QC466	"		Y				Y		"	X		
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Environmental Division
Brisbane
Work Order Reference
EB2233631

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted]	Signed [redacted]	Date: 9/11/22	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed [redacted]	Date: 9/11/22	Received by:	Signed:	Date:

1731

Please report Sample ID's as per COC's.

AECOM

Chain of Custody

AECOQ6/221025/1

COC Page 1 of 7

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name: MW

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By: [redacted]

Mobile no. : [redacted]

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specification [redacted] report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details:)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD
1	0861_SW088_221019	19.10.22		X							X	
2	0861_SD047_221019				X						X	
3	0861_SW047_221019			X							X	
4	0861_SW094_221019			X							X	
5	0861_SD094_221019				X						X	
6	0861_SW036_221019			X							X	
7	0861_SD036_221019				X						X	
—	~~0861_SD088_221020~~	20/10/22										
—	~~0861_SW088_221020~~											
—	~~0861_SW026_221020~~											
—	~~0861_SD026_221020~~											
8	0861_SD041_221020	20.10.22			X						X	
9	0861_SW041_221020		X							8 un	X	
10	0861_QC188_221020			X							X	

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice [redacted]

Relinquished by: [redacted]

Received by: [redacted]

Signed: Date:

Signed: Date: 21/10

1739

Relinquished by: DM

Received by: 24/10/22

Signed: Date:

Signed: Date:

Notes

RECEIVED
25 OCT 2022
BY: NN 14:45

Extra volume

Lab Report No | Esky ID

Starboard: LAB 100006685

Please report sample IDs as per COCs

AECOM

Chain of Custody

COC Page 2 of 7

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
N22/020947	0861_QC288_221020	20/10/22			X						X		Forward to MNI
11	0861_QC289_221020			X							X		
N22/020948	0861_QC289-221020			X							X		Forward to MNI
12	0861_MW55S_221020			X							X		
13	0861_MW55D_221020			X							X		
—	0861_~~SD043_221020~~										~~X~~		
—	0861_~~SW043_221020~~										~~X~~		
—	0861_~~SA039_221020~~												
—	0861_~~SW039_221020~~												
—	0861_~~SD025_221020~~												
—	0861_~~SW025_221020~~												
16	0861_SW051_221020			X							X		
15	0861_SD051_221020	↓			X						X		
—	0861_												

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by:		Signed:	Date:	Relinquished by: Om	Signed: Date: 24/10
Received by:		Signed:	Date:	Received by:	Signed: Date:

Please report Sample IDs as per COCs.

AECOM

Chain of Custody

COC Page 3 of 7

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
16	0861_SD091-221021	21/10/21			x						x		
17	0861_SW091-221021	/		x							x		
18	0861_SW090_221021			x							x		
19	0861_SD090-221021				x						x		
20	0861_SD021_221021				x						x		
21	0861_SW021_221021			x							x		
22	0861_SW037_221021			x							x		
23	0861_SD037_221021				x						x		
24	0861_SW059_221021			x							x		
25	0861_SD059_221021				x						x		
26	0861_SW030_221021			x							x		
27	0861_SD030_221021				x						x		
28	0861_SW002_221021			x							x		
29	0861_SD002_221021				x						x		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: Signed: Date:
Received by: Signed: Date:

Relinquished by: [redacted] Signed: Date: 24/10
Received by: Signed: Date:

Please report Sample IDs as per COCs.

AECOM

Chain of Custody

COC Page 4 of 7

AECOM Australia Pty Ltd
[redacted]

Email reports to:
[redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
30	0861_SW056_221021	21.10.22		x						8	x		Extra volume
31	0861_SD056_221021	↓			x						x		
32	0861_QC190-221021	↓			x						x		
N22/020949	0861_QC290-221021	↓			x						x	✓	Forward to MNI
33	0861_QC191_221021	↓		x							x		
N22/020950	0861_QC291_221021	↓		x							x	✓	Forward to MNI
36	0861_SW027_221021	↓		x							x		
35	0861_SD027_221021	↓			x						x		
38	0861_SW003_221021	↓		x							x		
37	0861_SD003_221021	↓			x						x		
34	0861_SW099_221020	20.10.22		x							x		
39	0861_SD099_221020	↓			x						x		
40	0861_SD100_221020	↓			x						x		
41	0861_SW100_221020	↓		x							x		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**
Temp. received: °C
Report & invoice: [redacted]
Lab Report No: Esky ID:

Relinquished by: Signed: Date:
Received by: Signed: Date:

Relinquished by: OW Signed: Date: 24/10
Received by: Signed: Date:

Please report Sample IVs per COCs.

AECOM

Chain of Custody

COC Page 5 of 7

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	Analysis Request: HOLD	Notes
42	0861_SD015_221018	18/10/22			X					1x unpreserved	X		
43	0861_SW016_221018			X						2x unpresamp	X		
46	0861_SD016_221018				X					1x unpreserved	X		
45	0861_SW034_221018			X						2x un	X		
46	0861_SD034_221018				X					1x un	X		
47	0861_SD018_221018				X					1x un	X		
48	0861_SW018_221018			X						2x un	X		
49	0861_SD020_221018				X					1x un	X		
50	0861_SW020_221018			X						8x un	X		Extra volume
51	0861_QC354_221018			X							X		
52	0861_QC459_221018			X							X		
53	0861_QC404_221018			X							X		
54	0861_QC204_221018				X						X		
55	0861_QC105_221018			X							X		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by:
Signed:
Date:

Received by:
Signed:
Date:

Relinquished by: Om
Signed:
Date: 24/10

Received by:
Signed:
Date:

Please report Sample ID's as per COC.

AECOM

Chain of Custody

COC Page 6 of 7

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
56	0861_SW005 - 22 10 18	18.10.22		X						8 un	X		Extra volume
57	0861_SD005 - 22 10 18	↓			X					1 un	X		
58	0861_QC182 - 22 10 18			X						2 un	X		
59	0861_QC183 - 22 10 18				X					1 un	X		
60	0861_QC527 - 22 10 18				X					1 un	Y		
N22/020951	0861_QC282 - 22 10 18			X						2 un	X		Forward to MNI
N22/020952	0861_QC283 - 22 10 18				X					1 un	X		Forward to MNI
61	0861_SW008 - 22 10 18			X						2 un	X		
62	0861_SD008 - 22 10 18				X					1 un	X		
63	0861_SW009 - 22 10 18			X						2 un	X		
64	0861_SD009 - 22 10 18				X					1 un	X		
65	0861_SW004 - 22 10 18			X						2 un	X		
66	0861_SD004 - 22 10 18				X					1 un	X		
67	0861_SW015 - 22 10 18	↓		X						2 un	X		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice [redacted]

Lab Report No: Esky ID:

Relinquished by:		Signed:	Date:	Relinquished by:	Signed: 24/10 Date:
Received by:		Signed:	Date:	Received by:	Signed: Date:

Please report Sample ID's as per COCs

AECOM

Chain of Custody

COC Page 7 of 7

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By:
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
N22/020953	0861_QC283_221018	18/10/22		X							X		Forward to MNI
68	0861_SD049 - 221019	19/10/22			X						X		
69	0861_SW049 - 221019			X						8 or ca	X		
70	0861_QC186 - 221019				X						X		Extra volume
N22/020954	0861_QC286 - 221019				X						X		
71	0861_QC187 - 221019			X							X		Forward to NMI
72	0861_QC287 - 221019			X							X		
N22/020955	0861_QC460 - 221019			X							X		
73	0861_QC529 - 221019			X							X		Forward to NMI
74	0861_SD089_221019				X						X		
75	0861_SW087 - 221019			X							X		
76	0861_SW052 - 221019			X							X		
77	0861_SD052 - 221019				X						X		
78	0861_SW088 - 221019			X							X		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Relinquished by: Signed: Date:
Received by: Signed: Date:

Relinquished by: ON Signed: Date: 24/0
Received by: Signed: Date:

Lab Report No: Esky ID:

AECOM

Chain of Custody

Sample IDs as per CoC

COC Page 2 of 5

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. : [redacted]

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

AEC006/221102
Due: 4/11/22 AO
Notes
9/11

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	
15	0861_QC292_221024	24-10-22		X						2	Y		Forward to MNI
	0861_MW026_221024	↓		X						2	Y		
	0861_MW037_221024			X						2	Y		
	0861_MW032_221024			X						2	Y		
	0861_MW050_221024			X						2	X		
	0861_MW005_221024			Y						2	Y		
	0861_QC358_221024			Y						2	X		
	0861_QC463_221024			Y						2	X		
	0861_MW025_221024			X						2	Y		
	0861_QC533_221024			Y						2	X		
	0861_QC534_221024	↓			X					1	X		
	0861_QC193_221025	25-10-22		X						2	Y		
	0861_QC293_221025	↓		X						2	Y		Forward to MNI
	0861_MW036_221025	↓		X						8	X		

N22/021565

N22/021566

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02 NOV 2022
BY: [redacted] 15:30

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted] Signed: Date:
Received by: Signed: Date:

Relinquished by: [redacted] Signed: Date:
Received by: Signed: Date:

PER CoC

AECOM

Chain of Custody

COC Page 3 of 5

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. : [redacted]

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
	0861_MW049_221025	25.10.22		X						2	X		
	0861_MW048_221025			X						2	X		
	0861_MW047_221025			X						2	X		
	0861_MW020_221025			X						2	X		
	0861_MW309_221025			X						2	X		
	0861_MW046_221025			X						2	X		
	0861_MW041_221025			X						2	X		
	0861_SD033_221025				X					1	X		
	0861_QC194_221025				X					1	X		
	0861_QC294_221025				X					1	X		N22/021567 Forward to MNI
	0861_SW033_221025			X						8	X		
	0861_QC195_221025			X						2	X		
	0861_QC295_221025			X						2	X		N22/021568 Forward to MNI
	0861_MW043_221025	↓		X						8	X		

RECEIVED
02 NOV 2022
BY: .....

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by:		Signed:	Date:	Relinquished by:	Signed: Date:
Received by: [redacted]		Signed:	Date:	Received by:	Signed: Date:

AECOM

Chain of Custody

Sample IDs as per COC

COC Page 4 of 5

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By: [redacted]

Mobile no. : [redacted]

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Lab ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
	0861_QC196_221025	25.10.22		X						2	X		
	0861_QC296_221025			X						2	X		N22/021569 Forward to MNI
	0861_MW031_221025			X						2	X		
	0861_MW030_221025			X						2	X		
	0861_QC359_221025			X						2	X		
	0861_QC464_221025			X						2	X		
	0861_SD008_221026	26.10.22			X					1	X		
	0861_SW008_261026			X						2	X		
	0861_MW028_221026			X						2	X		
	0861_MW029_221026			X						2	X		
	0861_MW044_221026			X						8	X		
	0861_QC197_221026			X						2	X		
	0861_QC297_221026			X						2	X		N22/021570 Forward to MNI
	0861_MW023_221026			X						2	X		

RECEIVED
02 NOV 2022
BY: .....

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by:		Signed:	Date:	Relinquished by:	Signed: Date:
Received by:	SP 27/10/22 0935	Signed:	Date:	Received by:	Signed: Date:

LA3100006867

AECOM

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

AECOPE/221115
Due 22/11/22 RN

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. : [redacted]

Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: fil'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0861_MW034_221109	9/11/22		Y				Y		6 x unpreserved	X		Extra Vol for MS + LD
2	0861_MW022_221109			Y				Y		2 x unpreserved	X		
3	0861_QC198			Y				Y		4	X		
	0861_QC298 N22/022614			X				Y		4	X		Please forward to NMI.
4	0861_MW035_221109			X				Y			X		
5	0861_QC361			X				Y			X		
6	0861_QC466			Y				X			X		
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

RECEIVED
15 NOV 2022
BY: RN 13:15

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Sign [redacted] Date: 9/11/22
Received by: [redacted] Sign [redacted] Date: 9/11/22

Relinquished by: [redacted] Signed: 14/11/22 Date:
Received by: Signed: Date:

1731

Appendix E

Laboratory Analytical Certificates and QA/QC Reports

Appendix E Laboratory Analytical Certificates and QA/QC Reports

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2231197**		
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: +[redacted]
Facsimile	: [redacted]	Facsimile	: +[redacted]
Project	: QLD_0861_PFASOMP	Page	: 1 of 6
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Oct-2022 17:39	Issue Date	: 24-Nov-2022
Client Requested Due Date	: 04-Nov-2022	Scheduled Reporting Date	: **04-Nov-2022**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 8.7°, 2.3°,2.0°C - Ice present
Receipt Detail	: Medium esky	No. of samples received / analysed	: 88 / 83

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***25/10/2022: SRN has been resent to acknowledge request for updated Project ID, Sample IDs for Samples 005,008,012,013,080,081, and assign analysis PFAS (EP231X) to Samples 079-081.***
- ***SRN Reissued 24/11/2022: To acknowledge request for Updated sample ID's for ALS Samples 008, and 086.***
- ***24/10/2022: SRN has been resent to acknowledge the changes to this work order to correctly reflect samples received. For any further information regarding these adjustments please contact client services at ALSEnviro.Brisbane@alsglobal.com.**
- **26/10/22: SRN has been resent to acknowledge that PFAS has been added to Samples 82-88 as requested. For any further information regarding these adjustments please contact client services at ALSEnviro.Brisbane@alsglobal.com.**
- **Please be advised that for sample 0861_QC528_221019, the requested PFAS analysis was not assigned as no appropriate container was submitted for analysis. For further information, please contact client services at ALSEnviro.Brisbane@alsglobal.com**
- **Various extra samples were received labelled as ALS #78<->88. 079-081 have had PFAS assigned, the remainder have been placed on hold. If testing is required on these samples, please contact ALS Client Services at ALSEnviro.Brisbane@alsglobal.com**
- ***26/10/2022: SRN has been resent to acknowledge consolidation of comments referring to changes to sample IDs and analysis. For any further information regarding these adjustments please contact client services at ALSEnviro.Brisbane@alsglobal.com.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- **Variuos samples have been forwarded to Eurofins as requested.**

- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2231197-002	19-Oct-2022 00:00	0861_SD047_221019	✓	✓
EB2231197-005	19-Oct-2022 00:00	0861_SD094_221019	✓	✓
EB2231197-007	19-Oct-2022 00:00	0861_SD036_221019	✓	✓
EB2231197-008	20-Oct-2022 00:00	0861_SD041_221020	✓	✓
EB2231197-010	20-Oct-2022 00:00	0861_QC188_221020	✓	✓
EB2231197-015	20-Oct-2022 00:00	0861_SD051_221020	✓	✓
EB2231197-016	21-Oct-2022 00:00	0861_SD091_221021	✓	✓
EB2231197-019	21-Oct-2022 00:00	0861_SD090_221021	✓	✓
EB2231197-020	21-Oct-2022 00:00	0861_SD021_221021	✓	✓
EB2231197-023	21-Oct-2022 00:00	0861_SD037_221021	✓	✓
EB2231197-025	21-Oct-2022 00:00	0861_SD059_221021	✓	✓
EB2231197-027	21-Oct-2022 00:00	0861_SD030_221021	✓	✓
EB2231197-029	21-Oct-2022 00:00	0861_SD002_221021	✓	✓
EB2231197-031	21-Oct-2022 00:00	0861_SD056_221021	✓	✓
EB2231197-032	21-Oct-2022 00:00	0861_QC190_221021	✓	✓
EB2231197-035	21-Oct-2022 00:00	0861_SD027_221021	✓	✓
EB2231197-037	21-Oct-2022 00:00	0861_SD003_221021	✓	✓
EB2231197-039	20-Oct-2022 00:00	0861_SD099_221020	✓	✓
EB2231197-040	20-Oct-2022 00:00	0861_SD100_221020	✓	✓
EB2231197-042	18-Oct-2022 00:00	0861_SD015_221018	✓	✓
EB2231197-044	18-Oct-2022 00:00	0861_SD016_221018	✓	✓
EB2231197-046	18-Oct-2022 00:00	0861_SD034_221018	✓	✓
EB2231197-047	18-Oct-2022 00:00	0861_SD018_221018	✓	✓
EB2231197-049	18-Oct-2022 00:00	0861_SD020_221018	✓	✓
EB2231197-054	18-Oct-2022 00:00	0861_QC284_221018	✓	✓
EB2231197-057	18-Oct-2022 00:00	0861_SD005_221018	✓	✓
EB2231197-059	18-Oct-2022 00:00	0861_QC183_221018	✓	✓
EB2231197-060	18-Oct-2022 00:00	0861_QC527_221018	✓	✓
EB2231197-066	18-Oct-2022 00:00	0861_SD004_221018	✓	✓
EB2231197-068	19-Oct-2022 00:00	0861_SD049_221019	✓	✓
EB2231197-070	19-Oct-2022 00:00	0861_QC186_221019	✓	✓
EB2231197-074	19-Oct-2022 00:00	0861_SD089_221019	✓	✓
EB2231197-077	19-Oct-2022 00:00	0861_SD052_221019	✓	✓
EB2231197-079	21-Oct-2022 00:00	0861_SD028_221018	✓	✓
EB2231197-081	21-Oct-2022 00:00	0861_SD048_221019	✓	✓

			SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2231197-082	19-Oct-2022 00:00	0861_SD088_221019	✓	✓
EB2231197-083	19-Oct-2022 00:00	0861_QC184_221019	✓	✓
EB2231197-088	19-Oct-2022 00:00	0861_QC529_221020	✓	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	(On Hold) WATER No analysis requested	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2231197-001	19-Oct-2022 00:00	0861_SW088_221019		✓
EB2231197-003	19-Oct-2022 00:00	0861_SW047_221019		✓
EB2231197-004	19-Oct-2022 00:00	0861_SW094_221019		✓
EB2231197-006	19-Oct-2022 00:00	0861_SW036_221019		✓
EB2231197-009	20-Oct-2022 00:00	0861_SW041_221020		✓
EB2231197-011	20-Oct-2022 00:00	0861_QC189_221020		✓
EB2231197-012	20-Oct-2022 00:00	0861_MW055S_221020		✓
EB2231197-013	20-Oct-2022 00:00	0861_MW055D_221020		✓
EB2231197-014	20-Oct-2022 00:00	0861_SW051_221020		✓
EB2231197-017	21-Oct-2022 00:00	0861_SW091_221021		✓
EB2231197-018	21-Oct-2022 00:00	0861_SW090_221021		✓
EB2231197-021	21-Oct-2022 00:00	0861_SW021_221021		✓
EB2231197-022	21-Oct-2022 00:00	0861_SW037_221021		✓
EB2231197-024	21-Oct-2022 00:00	0861_SW059_221021		✓
EB2231197-026	21-Oct-2022 00:00	0861_SW030_221021		✓
EB2231197-028	21-Oct-2022 00:00	0861_SW002_221021		✓
EB2231197-030	21-Oct-2022 00:00	0861_SW056_221021		✓
EB2231197-033	21-Oct-2022 00:00	0861_QC191_221021		✓
EB2231197-034	21-Oct-2022 00:00	0861_SW027_221021		✓
EB2231197-036	21-Oct-2022 00:00	0861_SW003_221021		✓
EB2231197-038	20-Oct-2022 00:00	0861_SW099_221020		✓
EB2231197-041	20-Oct-2022 00:00	0861_SW100_221020		✓
EB2231197-043	18-Oct-2022 00:00	0861_SW016_221018		✓
EB2231197-045	18-Oct-2022 00:00	0861_SW034_221018		✓
EB2231197-048	18-Oct-2022 00:00	0861_SW018_221018		✓
EB2231197-050	18-Oct-2022 00:00	0861_SW020_221018		✓

			(On Hold) WATER No analysis requested	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2231197-051	18-Oct-2022 00:00	0861_QC354_221018		✓
EB2231197-052	18-Oct-2022 00:00	0861_QC459_221018		✓
EB2231197-055	18-Oct-2022 00:00	0861_QC185_221018		✓
EB2231197-056	18-Oct-2022 00:00	0861_SW005_221018		✓
EB2231197-058	18-Oct-2022 00:00	0861_QC182_221018		✓
EB2231197-063	18-Oct-2022 00:00	0861_SW009_221018		✓
EB2231197-065	18-Oct-2022 00:00	0861_SW004_221018		✓
EB2231197-067	18-Oct-2022 00:00	0861_SW015_221018		✓
EB2231197-069	19-Oct-2022 00:00	0861_SW049_221019		✓
EB2231197-071	19-Oct-2022 00:00	0861_QC187_221019		✓
EB2231197-072	19-Oct-2022 00:00	0861_QC287_221019		✓
EB2231197-073	19-Oct-2022 00:00	0861_QC528_221019	✓	
EB2231197-075	19-Oct-2022 00:00	0861_SW089_221019		✓
EB2231197-076	19-Oct-2022 00:00	0861_SW052_221019		✓
EB2231197-080	21-Oct-2022 00:00	0861_SW048_221019		✓
EB2231197-084	19-Oct-2022 00:00	0861_QC355_221020		✓
EB2231197-085	19-Oct-2022 00:00	0861_QC356_221020		✓
EB2231197-086	19-Oct-2022 00:00	0861_QC461_221020		✓
EB2231197-087	19-Oct-2022 00:00	0861_QC530_221020	✓	

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- *AU Certificate of Analysis - NATA (COA)	Email	derp.labreports@esdat.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	derp.labreports@esdat.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	derp.labreports@esdat.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	derp.labreports@esdat.com.au
- Chain of Custody (CoC) (COC)	Email	derp.labreports@esdat.com.au
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	derp.labreports@esdat.com.au
- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2231197**	Page	: 1 of 37
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: +[redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 21-Oct-2022 17:39
Order number	: 60612563 3.1	Date Analysis Commenced	: 24-Oct-2022
C-O-C number	: ----	Issue Date	: 24-Nov-2022 10:42
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 88		
No. of samples analysed	: 83		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
	2IC Organic Chemist	Brisbane Inorganics, Stafford, QLD
	2IC Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X PFAS: Sample "0861_SD059_221021" shows poor duplicate results due to sample heterogeneity. Confirmed by visual inspection.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment (24/11/2022): This report has been amended as a result of a request to change sample identification numbers (IDs) received from [redacted] on 23/11/2022, for samples EB2231197 008 and 086. All analysis results are as per the previous report.
- EP231X PFAS: Sample "0861_SD028_221018" required dilution prior to analysis due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- EP231X PFAS: Particular samples required dilution prior to analysis due to the presence of sample matrix interference. LOR values have been adjusted accordingly. Surrogate recoveries not determined. Matrix Spike recovery not determined.
- EP231X PFAS: The LOR of particular analytes have been raised due to the presence of sample matrix interference.
- EP231X PFAS: Sample "EM2220638-015" shows poor duplicate results due to sample heterogeneity. Confirmed by visual inspection.
- EP231X PFAS (water): Whole bottle extraction was not possible for particular samples. Samples required dilution prior to extraction due to matrix interference (sediment). LOR values have been adjusted accordingly.
- EP231X PFAS: High laboratory control standard recoveries have been deemed acceptable as associated analyte results are less than the limit of reporting.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD047_221019	0861_SD094_221019	0861_SD036_221019	0861_SD041_221020	0861_QC188_221020
				Sampling date / time	19-Oct-2022 00:00	19-Oct-2022 00:00	19-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231197-002	EB2231197-005	EB2231197-007	EB2231197-008	EB2231197-010
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**63.6**	**30.4**	**40.8**	**89.3**	**83.3**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0023**	**0.0021**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0122**	**0.0045**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	**0.0004**	**0.0746**	**0.0306**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0061**	**0.0037**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0015**	**0.0011**	**0.0096**	**0.291**	**0.230**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	**0.0007**	**0.0050**	**0.0044**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0006**	<0.0006
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	**0.0002**	**0.0057**	**0.0037**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0012**	<0.0006
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0027**	**0.0018**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	**0.0002**	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0010**	**0.0010**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0024**	**0.0025**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0003**	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0006	<0.0006
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0013**	**0.0017**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0006	<0.0006

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD047_221019	0861_SD094_221019	0861_SD036_221019	0861_SD041_221020	0861_QC188_221020
				Sampling date / time	19-Oct-2022 00:00	19-Oct-2022 00:00	19-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231197-002	EB2231197-005	EB2231197-007	EB2231197-008	EB2231197-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0006	<0.0006
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0006	<0.0006
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0006	<0.0006
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0015**	**0.0011**	**0.0111**	**0.406**	**0.286**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0015**	**0.0011**	**0.0100**	**0.366**	**0.261**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0015**	**0.0011**	**0.0102**	**0.378**	**0.268**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**112**	**116**	**106**	**102**	**90.5**
13C8-PFOA	----	0.0002	%		**92.0**	**98.5**	**89.5**	**91.5**	**99.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_SD051_221020	0861_SD091_221021	0861_SD090_221021	0861_SD021_221021	0861_SD037_221021
			Sampling date / time	20-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	EB2231197-015	EB2231197-016	EB2231197-019	EB2231197-020	EB2231197-023
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**34.5**	**49.4**	**62.8**	**35.5**	**81.8**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0010**	<0.0018
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0011**	**0.0022**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0015**	<0.0002	<0.0002	**0.0133**	**0.0210**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0017**	**0.0034**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0110**	**0.0010**	**0.0015**	**0.111**	**0.184**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	**0.0010**	<0.0002	<0.0002	**0.0117**	<0.0028
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	**0.0006**	<0.0002	<0.0002	**0.0010**	**0.0013**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	**0.0007**	<0.0002	<0.0002	**0.0033**	**0.0046**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	**0.0005**	**0.0003**	<0.0002	**0.0008**	<0.0004
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	**0.0003**	<0.0002	<0.0002	**0.0022**	**0.0018**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0003**	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	**0.0002**	<0.0002	**0.0003**	**0.0002**	**0.0012**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0010**	**0.0009**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0010**	**0.0016**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0012**	**0.0005**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	**0.0003**	<0.0002	<0.0002	**0.0034**	**0.0004**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0006

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD051_221020	0861_SD091_221021	0861_SD090_221021	0861_SD021_221021	0861_SD037_221021
				Sampling date / time	20-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231197-015	EB2231197-016	EB2231197-019	EB2231197-020	EB2231197-023
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0006
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0006
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0006
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0161**	**0.0013**	**0.0018**	**0.154**	**0.223**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0125**	**0.0010**	**0.0015**	**0.124**	**0.205**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0146**	**0.0013**	**0.0015**	**0.133**	**0.213**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**96.0**	**106**	**87.5**	**104**	**91.0**
13C8-PFOA	----	0.0002	%		**104**	**103**	**102**	**96.5**	**104**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_SD059_221021	0861_SD030_221021	0861_SD002_221021	0861_SD056_221021	0861_QC190_221021
			Sampling date / time	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	EB2231197-025	EB2231197-027	EB2231197-029	EB2231197-031	EB2231197-032
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**91.2**	**66.0**	**45.8**	**72.2**	**72.4**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	**0.0064**	**0.0018**	<0.0002	**0.0123**	**0.0161**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	**0.0067**	**0.0022**	<0.0002	**0.0327**	**0.0291**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0751**	**0.0336**	**0.0009**	**0.418**	**0.426**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	**0.0110**	**0.0058**	<0.0002	<0.0042	**0.0049**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**1.02**	**0.296**	**0.0139**	**0.330**	**0.372**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	**0.0299**	**0.0022**	**0.0008**	<0.0032	**0.0044**
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	**0.005**	**0.002**	<0.001	<0.004	**0.007**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0005	**0.0048**	**0.0002**	**0.0144**	**0.0158**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	**0.0178**	**0.0070**	**0.0004**	**0.0605**	**0.0638**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	**0.0059**	**0.0026**	<0.0002	**0.0278**	**0.0292**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	**0.0156**	**0.0035**	**0.0002**	**0.0191**	**0.0246**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	**0.0043**	**0.0016**	<0.0002	**0.0017**	**0.0022**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	**0.0048**	**0.0026**	**0.0002**	**0.0016**	**0.0028**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	**0.0068**	**0.0067**	**0.0006**	**0.0016**	**0.0025**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	**0.0059**	**0.0126**	**0.0009**	<0.0008	**0.0024**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	**0.0010**	**0.0045**	**0.0003**	<0.0005	**0.0007**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0012	**0.0022**	<0.0005	<0.0012	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	**0.0014**	<0.0005	<0.0002	<0.0005	**0.0003**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0012	<0.0012	<0.0005	<0.0012	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD059_221021	0861_SD030_221021	0861_SD002_221021	0861_SD056_221021	0861_QC190_221021
				Sampling date / time	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231197-025	EB2231197-027	EB2231197-029	EB2231197-031	EB2231197-032
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0012	<0.0005	<0.0005	<0.0012	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0012	<0.0012	<0.0005	<0.0012	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0012	<0.0012	<0.0005	<0.0012	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0005	<0.0005	<0.0002	<0.0005	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0005	<0.0002	<0.0002	<0.0005	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0010	**0.0025**	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	**0.0014**	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	**0.0005**	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**1.22**	**0.396**	**0.0184**	**0.920**	**1.00**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**1.10**	**0.330**	**0.0148**	**0.748**	**0.798**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**1.14**	**0.355**	**0.0156**	**0.882**	**0.954**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**104**	**111**	**109**	**108**	**106**
13C8-PFOA	----	0.0002	%		**100**	**99.5**	**108**	**95.0**	**100**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_SD027_221021	0861_SD003_221021	0861_SD099_221020	0861_SD100_221020	0861_SD015_221018
			Sampling date / time	21-Oct-2022 00:00	21-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00	18-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	EB2231197-035	EB2231197-037	EB2231197-039	EB2231197-040	EB2231197-042
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**38.3**	**28.6**	**27.9**	**54.5**	**42.3**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	**0.0010**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	**0.0016**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0210**	**0.0046**	**0.0014**	**0.0003**	**0.0002**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	**0.0016**	**0.0003**	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.105**	**0.0268**	**0.0042**	**0.0058**	**0.0042**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	**0.0010**	**0.0005**	**0.0012**	<0.0002	**0.0006**
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	**0.001**	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	**0.0017**	**0.0021**	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	**0.0070**	**0.0020**	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	**0.0022**	**0.0016**	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	**0.0027**	**0.0026**	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	**0.0004**	**0.0007**	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	**0.0015**	**0.0002**	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	**0.0008**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	**0.0018**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	**0.0009**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	**0.0009**	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD027_221021	0861_SD003_221021	0861_SD099_221020	0861_SD100_221020	0861_SD015_221018
				Sampling date / time	21-Oct-2022 00:00	21-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00	18-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231197-035	EB2231197-037	EB2231197-039	EB2231197-040	EB2231197-042
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.152**	**0.0414**	**0.0068**	**0.0061**	**0.0050**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.126**	**0.0314**	**0.0056**	**0.0061**	**0.0044**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.142**	**0.0397**	**0.0056**	**0.0061**	**0.0044**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**102**	**113**	**98.0**	**96.0**	**110**
13C8-PFOA	----	0.0002	%		**101**	**106**	**106**	**100**	**97.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD016_221018	0861_SD034_221018	0861_SD018_221018	0861_SD020_221018	0861_QC284_221018
				Sampling date / time	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231197-044	EB2231197-046	EB2231197-047	EB2231197-049	EB2231197-054
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**45.2**	**42.5**	**52.9**	**35.2**	**43.3**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0005	<0.0010	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0005	<0.0010	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0004	**0.0056**	<0.0010	**0.0007**	**0.0010**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0005	<0.0010	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0061**	**0.0565**	<0.0080	**0.0126**	**0.0190**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0005	<0.0010	**0.0009**	**0.0015**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.002	<0.005	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0005	<0.0010	**0.0002**	**0.0002**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0005	<0.0010	**0.0003**	**0.0005**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0005	<0.0010	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0005	<0.0010	**0.0004**	**0.0005**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0005	<0.0010	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0005	<0.0010	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0005	<0.0010	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0005	<0.0010	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0005	<0.0010	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0012	<0.0025	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0005	<0.0010	**0.0002**	**0.0002**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0012	<0.0025	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD016_221018	0861_SD034_221018	0861_SD018_221018	0861_SD020_221018	0861_QC284_221018
				Sampling date / time	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231197-044	EB2231197-046	EB2231197-047	EB2231197-049	EB2231197-054
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0012	<0.0025	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0012	<0.0025	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0012	<0.0025	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0005	<0.0010	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0005	<0.0010	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0010	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0010	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0010	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0010	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0061**	**0.0621**	<0.0010	**0.0153**	**0.0229**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0061**	**0.0621**	<0.0010	**0.0133**	**0.0200**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0061**	**0.0621**	<0.0010	**0.0142**	**0.0212**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**121**	**Not Determined**	**Not Determined**	**108**	**112**
13C8-PFOA	----	0.0002	%		**112**	**Not Determined**	**Not Determined**	**110**	**117**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_SD005_221018	0861_QC183_221018	0861_QC527_221018	0861_SD004_221018	0861_SD049_221019
			Sampling date / time	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	19-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	EB2231197-057	EB2231197-059	EB2231197-060	EB2231197-066	EB2231197-068
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**54.0**	**52.0**	**12.8**	**31.0**	**10.3**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0010	<0.0010	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0010	<0.0010	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0049**	**0.0030**	<0.0002	**0.0008**	**0.0004**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0010	<0.0010	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.113**	**0.131**	<0.0002	**0.0016**	**0.0104**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0010	<0.0010	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.005	<0.005	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0010	<0.0010	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0010	<0.0010	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0010	<0.0010	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0010	<0.0010	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0010	<0.0010	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0010	<0.0010	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0010	<0.0010	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0010	<0.0010	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0010	<0.0010	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0025	<0.0026	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0010	<0.0010	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0025	<0.0026	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD005_221018	0861_QC183_221018	0861_QC527_221018	0861_SD004_221018	0861_SD049_221019
				Sampling date / time	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	19-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231197-057	EB2231197-059	EB2231197-060	EB2231197-066	EB2231197-068
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0025	<0.0026	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0025	<0.0026	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0025	<0.0026	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0010	<0.0010	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0010	<0.0010	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0010	<0.0010	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0010	<0.0010	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0010	<0.0010	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0010	<0.0010	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.118**	**0.134**	<0.0002	**0.0024**	**0.0108**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.118**	**0.134**	<0.0002	**0.0024**	**0.0108**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.118**	**0.134**	<0.0002	**0.0024**	**0.0108**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**Not Determined**	**Not Determined**	**108**	**108**	**91.5**
13C8-PFOA	----	0.0002	%		**Not Determined**	**Not Determined**	**120**	**104**	**115**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_QC186_221019	0861_SD089_221019	0861_SD052_221019	0861_SD028_221018	0861_SD048_221019
			Sampling date / time	19-Oct-2022 00:00	19-Oct-2022 00:00	19-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	EB2231197-070	EB2231197-074	EB2231197-077	EB2231197-079	EB2231197-081
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**20.4**	**29.6**	**32.8**	**64.5**	**42.4**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0013**	**0.0010**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0010	**0.0007**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0003**	<0.0002	<0.0002	**0.0147**	**0.0033**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0017**	**0.0002**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0135**	<0.0002	<0.0006	**0.453**	**0.0251**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0104**	**0.0014**
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.005	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0010	**0.0009**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0013**	**0.0016**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0010	**0.0005**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0010	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0010	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0010	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0175**	**0.0003**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0010	**0.0004**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0044**	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0025	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0022**	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0025	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_QC186_221019	0861_SD089_221019	0861_SD052_221019	0861_SD028_221018	0861_SD048_221019
				Sampling date / time	19-Oct-2022 00:00	19-Oct-2022 00:00	19-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231197-070	EB2231197-074	EB2231197-077	EB2231197-079	EB2231197-081
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0025	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0025	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0025	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0010	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0010	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0010	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0010	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0010	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0010	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0138**	<0.0002	<0.0002	**0.506**	**0.0354**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0138**	<0.0002	<0.0002	**0.468**	**0.0284**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0138**	<0.0002	<0.0002	**0.470**	**0.0324**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**106**	**99.5**	**118**	**105**	**99.0**
13C8-PFOA	----	0.0002	%		**120**	**110**	**125**	**95.0**	**106**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_SD088_221019	0861_QC184_221019	0861_QC529_221020	----	----
			Sampling date / time	19-Oct-2022 00:00	19-Oct-2022 00:00	19-Oct-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	EB2231197-082	EB2231197-083	EB2231197-088	--------	--------
				Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**58.7**	**43.7**	**0.4**	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0020	<0.0002	<0.0002	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0020	<0.0002	<0.0002	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0020	**0.0010**	<0.0002	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0020	<0.0002	<0.0002	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0020	**0.0166**	<0.0002	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0020	**0.0011**	<0.0002	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.010	<0.001	<0.001	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0020	**0.0002**	<0.0002	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0020	**0.0005**	<0.0002	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0020	<0.0002	<0.0002	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0020	**0.0004**	<0.0002	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0020	<0.0002	<0.0002	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0020	<0.0002	<0.0002	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0020	<0.0002	<0.0002	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0020	<0.0002	<0.0002	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0020	<0.0002	<0.0002	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0050	<0.0005	<0.0005	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0020	**0.0002**	<0.0002	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0050	<0.0005	<0.0005	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD088_221019	0861_QC184_221019	0861_QC529_221020	----	----
				Sampling date / time	19-Oct-2022 00:00	19-Oct-2022 00:00	19-Oct-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2231197-082	EB2231197-083	EB2231197-088	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0050	<0.0005	<0.0005	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0050	<0.0005	<0.0005	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0050	<0.0005	<0.0005	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0020	<0.0002	<0.0002	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0020	<0.0002	<0.0002	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0020	<0.0005	<0.0005	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0020	<0.0005	<0.0005	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0020	<0.0005	<0.0005	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0020	<0.0005	<0.0005	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0020	**0.0200**	<0.0002	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0020	**0.0176**	<0.0002	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0020	**0.0187**	<0.0002	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**120**	**116**	**100**	----	----
13C8-PFOA	----	0.0002	%		**90.0**	**100**	**111**	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW088_221019	0861_SW047_221019	0861_SW094_221019	0861_SW036_221019	0861_SW041_221020
				Sampling date / time	19-Oct-2022 00:00	19-Oct-2022 00:00	19-Oct-2022 00:00	19-Oct-2022 00:00	20-Oct-2022 00:00
					EB2231197-001	EB2231197-003	EB2231197-004	EB2231197-006	EB2231197-009
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.08**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.10**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.78**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.04**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.02	<0.01	<0.01	**1.00**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.04**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.20**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.02**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.05**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW088_221019	0861_SW047_221019	0861_SW094_221019	0861_SW036_221019	0861_SW041_221020
				Sampling date / time	19-Oct-2022 00:00	19-Oct-2022 00:00	19-Oct-2022 00:00	19-Oct-2022 00:00	20-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231197-001	EB2231197-003	EB2231197-004	EB2231197-006	EB2231197-009
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**2.31**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**1.78**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**2.17**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**100**	**95.3**	**102**	**97.6**	**98.9**
13C8-PFOA	----	0.02	%		**104**	**104**	**104**	**106**	**102**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_QC189_221020	0861_MW055S_221020	0861_MW055D_221020	0861_SW051_221020	0861_SW091_221021
				Sampling date / time	20-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00	21-Oct-2022 00:00
					EB2231197-011	EB2231197-012	EB2231197-013	EB2231197-014	EB2231197-017
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.10**	<0.02	<0.02	**0.03**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.10**	<0.02	<0.02	**0.02**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.79**	**0.09**	<0.01	**0.16**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.06**	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.11**	**0.05**	<0.01	**0.17**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.05**	<0.02	<0.02	**0.02**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.21**	**0.03**	<0.02	**0.06**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.02**	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.05**	<0.01	<0.01	**0.01**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC189_221020	0861_MW055S_221020	0861_MW055D_221020	0861_SW051_221020	0861_SW091_221021
				Sampling date / time	20-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00	21-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231197-011	EB2231197-012	EB2231197-013	EB2231197-014	EB2231197-017
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**2.49**	**0.17**	<0.01	**0.47**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.90**	**0.14**	<0.01	**0.33**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**2.33**	**0.17**	<0.01	**0.45**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**98.7**	**113**	**96.8**	**102**	**106**
13C8-PFOA	----	0.02	%		**101**	**103**	**105**	**101**	**103**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW090_221021	0861_SW021_221021	0861_SW037_221021	0861_SW059_221021	0861_SW030_221021
				Sampling date / time	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00
					EB2231197-018	EB2231197-021	EB2231197-022	EB2231197-024	EB2231197-026
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**1.08**	**0.22**	**0.52**	**0.51**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**1.39**	**0.22**	**0.52**	**0.59**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	**9.98**	**1.55**	**3.27**	**4.74**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.56**	**0.10**	**0.20**	**0.32**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**14.6**	**1.82**	**5.41**	**5.00**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	**0.08**	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**0.9**	<0.1	**0.2**	**0.2**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**1.78**	**0.14**	**0.58**	**0.44**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**4.66**	**0.43**	**1.41**	**1.27**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.67**	**0.06**	**0.24**	**0.24**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**1.94**	**0.12**	**0.55**	**0.30**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	**0.10**	<0.02	**0.04**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW090_221021	0861_SW021_221021	0861_SW037_221021	0861_SW059_221021	0861_SW030_221021
				Sampling date / time	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231197-018	EB2231197-021	EB2231197-022	EB2231197-024	EB2231197-026
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	**0.11**	**0.69**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**37.7**	**4.66**	**13.0**	**14.3**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**24.6**	**3.37**	**8.68**	**9.74**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**35.6**	**4.34**	**12.3**	**13.4**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**102**	**102**	**101**	**113**	**99.7**
13C8-PFOA	----	0.02	%		**105**	**109**	**96.0**	**97.3**	**102**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW002_221021	0861_SW056_221021	0861_QC191_221021	0861_SW027_221021	0861_SW003_221021
				Sampling date / time	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00
					EB2231197-028	EB2231197-030	EB2231197-033	EB2231197-034	EB2231197-036
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.03**	**0.35**	**0.34**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.36**	**0.35**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.19**	**2.69**	**2.51**	**0.08**	**0.10**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.10**	**0.10**	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.31**	**2.31**	**2.34**	**0.16**	**0.33**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**0.1**	**0.1**	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.17**	**0.32**	**0.32**	<0.02	**0.06**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.16**	**0.88**	**0.89**	**0.04**	**0.06**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.08**	**0.18**	**0.18**	<0.02	**0.03**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.04**	**0.20**	**0.20**	<0.01	**0.02**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW002_221021	0861_SW056_221021	0861_QC191_221021	0861_SW027_221021	0861_SW003_221021
				Sampling date / time	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231197-028	EB2231197-030	EB2231197-033	EB2231197-034	EB2231197-036
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	**0.06**	**0.06**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.98**	**7.55**	**7.39**	**0.28**	**0.60**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.50**	**5.00**	**4.85**	**0.24**	**0.43**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.98**	**7.09**	**6.94**	**0.28**	**0.60**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.2**	**96.2**	**102**	**106**	**97.8**
13C8-PFOA	----	0.02	%		**97.8**	**102**	**102**	**99.8**	**101**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW099_221020	0861_SW100_221020	0861_SW016_221018	0861_SW034_221018	0861_SW018_221018
				Sampling date / time	20-Oct-2022 00:00	20-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00
					EB2231197-038	EB2231197-041	EB2231197-043	EB2231197-045	EB2231197-048
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	**0.02**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.02**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.04**	**0.03**	<0.01	**0.20**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.08**	**0.06**	**0.01**	**0.30**	<0.03
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.04**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW099_221020	0861_SW100_221020	0861_SW016_221018	0861_SW034_221018	0861_SW018_221018
				Sampling date / time	20-Oct-2022 00:00	20-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00
					EB2231197-038	EB2231197-041	EB2231197-043	EB2231197-045	EB2231197-048
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.12**	**0.09**	**0.01**	**0.58**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.12**	**0.09**	**0.01**	**0.50**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.12**	**0.09**	**0.01**	**0.56**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**100**	**105**	**107**	**108**	**94.0**
13C8-PFOA	----	0.02	%		**102**	**99.7**	**102**	**102**	**100**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW020_221018	0861_QC354_221018	0861_QC459_221018	0861_QC185_221018	0861_SW005_221018
				Sampling date / time	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00
					EB2231197-050	EB2231197-051	EB2231197-052	EB2231197-055	EB2231197-056
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.09**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.07**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.02	**0.51**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.03**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.02	**1.23**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.04**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.13**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**0.03**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW020_221018	0861_QC354_221018	0861_QC459_221018	0861_QC185_221018	0861_SW005_221018
				Sampling date / time	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231197-050	EB2231197-051	EB2231197-052	EB2231197-055	EB2231197-056
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**2.13**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**1.74**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	**2.03**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**107**	**103**	**96.7**	**95.0**	**109**
13C8-PFOA	----	0.02	%		**97.1**	**103**	**98.8**	**102**	**99.2**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_QC182_221018	0861_SW009_221018	0861_SW004_221018	0861_SW015_221018	0861_SW049_221019
				Sampling date / time	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	19-Oct-2022 00:00
					EB2231197-058	EB2231197-063	EB2231197-065	EB2231197-067	EB2231197-069
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.09**	**0.14**	<0.02	<0.02	**0.03**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.07**	**0.12**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.50**	**0.71**	<0.01	<0.01	**0.19**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.03**	**0.03**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.26**	**0.66**	<0.01	<0.01	**0.47**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.04**	**0.12**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.13**	**0.36**	<0.02	<0.02	**0.06**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.06**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.03**	**0.08**	<0.01	<0.01	<0.02
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.06
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.06
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.06

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC182_221018	0861_SW009_221018	0861_SW004_221018	0861_SW015_221018	0861_SW049_221019
				Sampling date / time	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	18-Oct-2022 00:00	19-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231197-058	EB2231197-063	EB2231197-065	EB2231197-067	EB2231197-069
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.06
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.06
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**2.15**	**2.28**	<0.01	<0.01	**0.75**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.76**	**1.37**	<0.01	<0.01	**0.66**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**2.05**	**2.13**	<0.01	<0.01	**0.75**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	**90.2**	**94.7**	**94.1**	**90.6**
13C8-PFOA	----	0.02	%		**100**	**104**	**105**	**98.5**	**99.0**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_QC187_221019	0861_QC287_221019	0861_SW089_221019	0861_SW052_221019	0861_SW048_221019
				Sampling date / time	19-Oct-2022 00:00	19-Oct-2022 00:00	19-Oct-2022 00:00	19-Oct-2022 00:00	21-Oct-2022 00:00
					EB2231197-071	EB2231197-072	EB2231197-075	EB2231197-076	EB2231197-080
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.03**	**0.03**	<0.02	<0.02	<0.03
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.02**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.17**	**0.17**	<0.01	<0.01	**0.16**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.46**	**0.44**	<0.01	<0.01	**0.43**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.02**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.07**	**0.08**	<0.02	<0.02	**0.08**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.02	<0.02	<0.01	<0.01	**0.02**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.06	<0.06	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.06	<0.06	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.06	<0.06	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC187_221019	0861_QC287_221019	0861_SW089_221019	0861_SW052_221019	0861_SW048_221019
				Sampling date / time	19-Oct-2022 00:00	19-Oct-2022 00:00	19-Oct-2022 00:00	19-Oct-2022 00:00	21-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231197-071	EB2231197-072	EB2231197-075	EB2231197-076	EB2231197-080
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.06	<0.06	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.06	<0.06	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**0.06**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.73**	**0.72**	<0.01	<0.01	**0.79**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.63**	**0.61**	<0.01	<0.01	**0.59**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.73**	**0.72**	<0.01	<0.01	**0.77**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	**89.7**	**88.0**	**93.2**	**118**
13C8-PFOA	----	0.02	%		**97.3**	**101**	**103**	**105**	**104**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC355_221020	0861_QC356_221020	0861_QC461_221020	----	----
				Sampling date / time	19-Oct-2022 00:00	19-Oct-2022 00:00	19-Oct-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2231197-084	EB2231197-085	EB2231197-086	--------	--------
					Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.03**	<0.01	<0.01	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC355_221020	0861_QC356_221020	0861_QC461_221020	----	----
				Sampling date / time	19-Oct-2022 00:00	19-Oct-2022 00:00	19-Oct-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2231197-084	EB2231197-085	EB2231197-086	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.03**	<0.01	<0.01	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.03**	<0.01	<0.01	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.03**	<0.01	<0.01	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.4**	**97.1**	**105**	----	----
13C8-PFOA	----	0.02	%		**108**	**94.1**	**106**	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2231197**	Page	: 1 of 31
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 21-Oct-2022
Order number	: 60612563 3.1	Date Analysis Commenced	: 24-Oct-2022
C-O-C number	: ----	Issue Date	: 24-Nov-2022
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 88		
No. of samples analysed	: 83		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD
	2IC Organic Chemist	Brisbane Inorganics, Stafford, QLD
	2IC Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4656223)									
EB2231197-002	0861_SD047_221019	EA055: Moisture Content	----	0.1	%	63.6	64.1	0.7	0% - 20%
EB2231197-025	0861_SD059_221021	EA055: Moisture Content	----	0.1	%	91.2	90.7	0.6	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4656233)									
EB2231197-044	0861_SD016_221018	EA055: Moisture Content	----	0.1	%	45.2	42.7	5.8	0% - 20%
EB2231197-066	0861_SD004_221018	EA055: Moisture Content	----	0.1	%	31.0	28.9	7.2	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4659758)									
EB2231197-079	0861_SD028_221018	EA055: Moisture Content	----	0.1	%	64.5	65.9	2.2	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4672900)									
EB2229439-001	Anonymous	EA055: Moisture Content	----	0.1	%	29.9	30.2	1.1	0% - 20%
EB2232008-002	Anonymous	EA055: Moisture Content	----	0.1	%	17.7	17.1	3.5	0% - 50%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4656222)									
EB2231197-002	0861_SD047_221019	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0015	0.0014	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2231197-025	0861_SD059_221021	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0064	0.0058	10.1	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	0.0067	0.0057	16.3	0% - 50%
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0751	# 0.0614	20.1	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0110	# 0.0076	37.3	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	1.02	# 0.786	26.3	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0299	# 0.0175	52.3	0% - 20%

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4656232)									
EB2231197-044	0861_SD016_221018	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0004	<0.0004	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0061	0.0055	10.4	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2231197-066	0861_SD004_221018	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0008	0.0004	77.4	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0016	0.0018	7.3	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4659757)									
EB2230988-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0003	0.0004	32.1	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2231197-081	0861_SD048_221019	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0010	0.0007	35.7	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	0.0007	0.0004	58.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0033	0.0021	44.4	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0251	0.0209	18.3	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0014	0.0015	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4663656)									
EB2231197-082	0861_SD088_221019	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
EM2220638-015	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0010	0.0010	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0106	# 0.0143	29.7	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4656222)									
EB2231197-002	0861_SD047_221019	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4656222) - continued									
EB2231197-002	0861_SD047_221019	EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2231197-025	0861_SD059_221021	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0178	0.0182	2.5	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0059	0.0054	8.9	0% - 50%
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0156	0.0134	15.5	0% - 20%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	0.0043	0.0034	23.6	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0048	0.0037	25.3	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0068	0.0044	43.9	0% - 50%
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0059	0.0037	45.0	0% - 50%
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	0.0010	0.0007	39.8	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0012	<0.0012	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	0.005	0.005	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4656232)									
EB2231197-044	0861_SD016_221018	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2231197-066	0861_SD004_221018	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4656232) - continued									
EB2231197-066	0861_SD004_221018	EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4659757)									
EB2230988-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2231197-081	0861_SD048_221019	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0009	0.0008	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0016	0.0012	26.4	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0005	0.0004	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0003	0.0003	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4663656)									
EB2231197-082	0861_SD088_221019	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0050	<0.0050	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.010	<0.010	0.0	No Limit
EM2220638-015	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0003	0.0004	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4663656) - continued									
EM2220638-015	Anonymous	EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0005	0.0005	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	0.0002	0.0003	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4656222)									
EB2231197-002	0861_SD047_221019	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2231197-025	0861_SD059_221021	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	0.0014	0.0011	27.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0012	<0.0012	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0012	<0.0012	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0012	<0.0012	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0012	<0.0012	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4656232)									
EB2231197-044	0861_SD016_221018	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4656232) - continued									
EB2231197-044	0861_SD016_221018	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2231197-066	0861_SD004_221018	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4659757)									
EB2230988-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2231197-081	0861_SD048_221019	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4659757) - continued									
EB2231197-081	0861_SD048_221019	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4663656)									
EB2231197-082	0861_SD088_221019	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0050	<0.0050	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0050	<0.0050	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0050	<0.0050	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0050	<0.0050	0.0	No Limit
EM2220638-015	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4656222)									
EB2231197-002	0861_SD047_221019	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4656222) - continued									
EB2231197-002	0861_SD047_221019	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2231197-025	0861_SD059_221021	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0010	<0.0010	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4656232)									
EB2231197-044	0861_SD016_221018	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2231197-066	0861_SD004_221018	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4659757)									
EB2230988-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4659757) - continued									
EB2231197-081	0861_SD048_221019	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4663656)									
EB2231197-082	0861_SD088_221019	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0020	<0.0020	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0020	<0.0020	0.0	No Limit
EM2220638-015	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4659531)									
EB2231197-030	0861_SW056_221021	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	2.69	2.35	13.5	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	2.31	2.32	0.0	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.35	0.32	8.4	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.36	0.31	13.6	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.10	0.10	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EB2231197-050	0861_SW020_221018	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.02	66.7	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4666274)									
EB2231197-069	0861_SW049_221019	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.19	0.18	7.1	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.47	0.51	8.2	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4671817)									
EB2231197-009	0861_SW041_221020	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.78	0.73	5.7	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	1.00	1.02	1.8	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.08	0.08	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.10	0.09	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4659531)									
EB2231197-030	0861_SW056_221021	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.20	0.20	0.0	0% - 50%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.32	0.30	6.2	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.88	0.82	6.5	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.18	0.17	7.3	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.1	0.1	0.0	No Limit
EB2231197-050	0861_SW020_221018	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4666274)									
EB2231197-069	0861_SW049_221019	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.06	0.07	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4666274) - continued									
EB2231197-069	0861_SW049_221019	EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4671817)									
EB2231197-009	0861_SW041_221020	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.05	0.04	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.20	0.19	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4659531)									
EB2231197-030	0861_SW056_221021	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2231197-050	0861_SW020_221018	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4659531) - continued									
EB2231197-050	0861_SW020_221018	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4666274)									
EB2231197-069	0861_SW049_221019	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.06	<0.06	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4671817)									
EB2231197-009	0861_SW041_221020	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4659531)									
EB2231197-030	0861_SW056_221021	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.06	0.06	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4659531) - continued									
EB2231197-030	0861_SW056_221021	EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2231197-050	0861_SW020_221018	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4666274)									
EB2231197-069	0861_SW049_221019	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4671817)									
EB2231197-009	0861_SW041_221020	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4659531)									
EB2231197-030	0861_SW056_221021	EP231X: Sum of PFAS	----	0.01	µg/L	7.55	7.05	6.8	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	5.00	4.67	6.8	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	7.09	6.64	6.6	0% - 20%
EB2231197-050	0861_SW020_221018	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4666274)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231P: PFAS Sums (QC Lot: 4666274) - continued									
EB2231197-069	0861_SW049_221019	EP231X: Sum of PFAS	----	0.01	µg/L	0.75	0.79	5.2	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.66	0.69	4.4	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.75	0.79	5.2	0% - 20%
EP231P: PFAS Sums (QC Lot: 4671817)									
EB2231197-009	0861_SW041_221020	EP231X: Sum of PFAS	----	0.01	µg/L	2.31	2.25	2.6	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	1.78	1.75	1.7	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	2.17	2.12	2.3	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4656222)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	89.5	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	108	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	114	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	105	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	93.5	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	85.0	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4656232)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	103	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	86.8	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	99.2	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	91.2	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	109	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	105	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4659757)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	97.3	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	92.3	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	100	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	86.6	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	100	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	85.0	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4663656)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	94.8	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	80.2	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	86.8	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	81.1	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	94.7	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	89.7	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4656222)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	101	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.8	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.6	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	93.6	72.0	129

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4656222) - continued								
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.2	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	100	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	95.2	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	94.7	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4656232)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	90.7	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	80.4	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.8	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.0	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.0	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	82.0	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.2	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.6	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.6	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.0	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	100	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4659757)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	92.6	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.8	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.2	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.6	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	86.4	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.0	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.0	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.2	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.8	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	97.3	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4663656)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	89.3	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	84.8	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.1	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	95.3	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.5	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.2	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	89.8	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.5	64.0	136

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4663656) - continued								
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.3	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	91.8	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	95.5	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4656222)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	79.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	97.6	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	89.6	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	106	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	103	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	101	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	80.4	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4656232)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	93.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	98.1	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	89.9	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	96.3	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	102	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	92.0	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4659757)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	102	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	101	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	110	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	90.5	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	100	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.4	61.0	139

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4663656)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.4	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	93.6	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	90.2	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	92.4	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	94.2	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	79.2	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	80.8	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4656222)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	110	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	104	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	97.9	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	70.8	54.8	124
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4656232)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	97.4	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	90.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	86.2	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	106	54.8	124
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4659757)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	94.9	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	97.9	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	96.2	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	84.2	54.8	124
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4663656)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	85.6	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	89.4	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	72.2	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	80.3	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4659531)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	118	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	123	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	117	68.0	131

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4659531) - continued								
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	116	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	112	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	112	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4666274)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	112	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	116	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	115	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	105	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	107	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	99.0	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4671817)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	128	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	127	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	124	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	131	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	133	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	123	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4671818)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	104	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	116	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	114	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	120	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	106	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	110	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4659531)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	115	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	123	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	119	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	115	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	122	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	117	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	114	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	106	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	111	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	106	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4666274)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	115	73.0	129

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4666274) - continued								
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	106	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	129	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	122	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	119	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	107	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	115	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	108	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	111	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	112	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	113	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4671817)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	122	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	119	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	128	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	118	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	133	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	121	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	127	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	117	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	126	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	128	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	126	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4671818)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	107	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	121	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	111	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	133	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	109	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	107	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	106	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	109	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	108	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	113	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4659531)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	114	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	118	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	112	60.5	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4659531) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	120	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	103	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	122	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	99.4	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4666274)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	116	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	118	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	114	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	102	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	113	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	122	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	113	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4671817)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	128	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	131	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	# 147	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	118	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	137	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	136	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	# 141	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4671818)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	116	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	120	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	115	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	98.7	68.3	134

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4671818) - continued								
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	112	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	115	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	118	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4659531)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	125	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	125	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	130	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	106	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4666274)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	124	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	113	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	109	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	101	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4671817)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	140	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	121	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	121	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	122	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4671818)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	114	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	118	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	97.3	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	92.1	64.2	133
EP231P: PFAS Sums (QCLot: 4659531)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 4666274)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 4671817)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231P: PFAS Sums (QCLot: 4671817) - continued								
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 4671818)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4656222)							
EB2231197-005	0861_SD094_221019	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	112	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	123	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	122	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	92.4	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	128	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	93.8	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4656232)							
EB2231197-046	0861_SD034_221018	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	# Not Determined	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	# Not Determined	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	102	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# Not Determined	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	# Not Determined	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4659757)							
EB2230988-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	112	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	101	73.0	123

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4659757) - continued							
EB2230988-002	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	106	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	118	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	96.5	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	67.1	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4663656)							
EB2231197-083	0861_QC184_221019	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.011 mg/kg	96.4	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0117 mg/kg	88.5	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0118 mg/kg	89.3	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0119 mg/kg	91.4	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0116 mg/kg	98.8	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.012 mg/kg	90.6	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4656222)							
EB2231197-005	0861_SD094_221019	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	118	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	94.8	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	123	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	119	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	130	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	108	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	118	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	115	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	96.0	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	122	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	114	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4656232)							
EB2231197-046	0861_SD034_221018	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	# Not Determined	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	# Not Determined	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	# Not Determined	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	# Not Determined	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	# Not Determined	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	# Not Determined	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	# Not Determined	69.0	133

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4656232) - continued							
EB2231197-046	0861_SD034_221018	EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	# Not Determined	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	# Not Determined	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	# Not Determined	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	# Not Determined	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4659757)							
EB2230988-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	101	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	88.4	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	119	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	104	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	108	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	84.4	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	100.0	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	108	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	94.8	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	100.0	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	111	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4663656)							
EB2231197-083	0861_QC184_221019	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.0625 mg/kg	90.0	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0125 mg/kg	90.2	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0125 mg/kg	96.5	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0125 mg/kg	99.3	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0125 mg/kg	108	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0125 mg/kg	89.2	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0125 mg/kg	97.0	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0125 mg/kg	95.4	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0125 mg/kg	84.7	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0125 mg/kg	121	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0312 mg/kg	102	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4656222)							
EB2231197-005	0861_SD094_221019	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	113	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	105	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	84.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	116	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4656222) - continued							
EB2231197-005	0861_SD094_221019	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	105	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	104	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	87.6	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4656232)							
EB2231197-046	0861_SD034_221018	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	# Not Determined	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	# Not Determined	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	# Not Determined	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	# Not Determined	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4659757)							
EB2230988-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	106	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	103	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	109	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	128	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	106	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	104	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	83.2	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4663656)							
EB2231197-083	0861_QC184_221019	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0125 mg/kg	99.4	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0312 mg/kg	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0312 mg/kg	87.8	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4663656) - continued							
EB2231197-083	0861_QC184_221019	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0312 mg/kg	84.0	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0312 mg/kg	87.9	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0125 mg/kg	104	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0125 mg/kg	96.9	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4656222)							
EB2231197-005	0861_SD094_221019	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	126	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	69.1	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	118	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	80.0	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4656232)							
EB2231197-046	0861_SD034_221018	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	# Not Determined	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	# Not Determined	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	# Not Determined	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	# Not Determined	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4659757)							
EB2230988-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	105	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	109	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	98.8	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	87.9	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4663656)							
EB2231197-083	0861_QC184_221019	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0117 mg/kg	84.5	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0118 mg/kg	84.2	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.012 mg/kg	88.4	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.012 mg/kg	70.3	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4659531)							
EB2231197-056	0861_SW005_221018	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	117	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	117	71.0	127

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4659531) - continued							
EB2231197-056	0861_SW005_221018	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	111	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	115	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	# Not Determined	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	103	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4666274)							
EB2231197-069	0861_SW049_221019	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	122	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	115	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	124	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	107	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	115	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	105	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4671817)							
EB2231197-009	0861_SW041_221020	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	103	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	95.8	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	89.8	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	94.8	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	97.8	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	95.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4659531)							
EB2231197-056	0861_SW005_221018	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	114	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	106	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	108	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	109	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	114	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	96.5	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	94.1	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	96.1	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	93.4	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	94.0	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	107	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4666274)							
EB2231197-069	0861_SW049_221019	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	122	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	110	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	129	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	122	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	117	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	111	69.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4666274) - continued							
EB2231197-069	0861_SW049_221019	EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	116	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	113	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	116	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	118	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	120	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4671817)							
EB2231197-009	0861_SW041_221020	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	115	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	95.4	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	115	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	102	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	104	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	91.6	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	92.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	102	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	93.0	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	95.6	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	103	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4659531)							
EB2231197-056	0861_SW005_221018	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	103	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	104	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	96.9	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	125	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	105	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	123	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	99.1	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4666274)							
EB2231197-069	0861_SW049_221019	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	123	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	128	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	114	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	113	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	114	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4666274) - continued							
EB2231197-069	0861_SW049_221019	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	122	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	112	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4671817)							
EB2231197-009	0861_SW041_221020	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	100	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	106	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	91.0	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	98.0	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	100	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	103	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	93.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4659531)							
EB2231197-056	0861_SW005_221018	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	109	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	113	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	104	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	77.4	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4666274)							
EB2231197-069	0861_SW049_221019	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	119	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	119	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	116	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	88.0	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4671817)							
EB2231197-009	0861_SW041_221020	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	113	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	99.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	95.0	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	71.8	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2231197**	Page	: 1 of 15
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 21-Oct-2022
Site	: ----	Issue Date	: 24-Nov-2022
Sampler	: [redacted]	No. of samples received	: 88
Order number	: 60612563 3.1	No. of samples analysed	: 83

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **Duplicate outliers exist - please see following pages for full details.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2231197--025	0861_SD059_221021	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	20.1 %	0% - 20%	**RPD exceeds LOR based limits**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2231197--025	0861_SD059_221021	**Perfluoroheptane sulfonic acid (PFHpS)**	375-92-8	37.3 %	0% - 20%	**RPD exceeds LOR based limits**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2231197--025	0861_SD059_221021	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	26.3 %	0% - 20%	**RPD exceeds LOR based limits**
EP231A: Perfluoroalkyl Sulfonic Acids	EM2220638--015	Anonymous	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	29.7 %	0% - 20%	**RPD exceeds LOR based limits**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2231197--025	0861_SD059_221021	**Perfluorodecane sulfonic acid (PFDS)**	335-77-3	52.3 %	0% - 20%	**RPD exceeds LOR based limits**
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2231197--046	0861_SD034_221018	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP231C: Perfluoroalkyl Sulfonamides	QC-4671817-002	----	**N-Ethyl perfluorooctane sulfonamide (EtFOSA)**	4151-50-2	147 %	60.5-138%	**Recovery greater than upper control limit**
EP231C: Perfluoroalkyl Sulfonamides	QC-4671817-002	----	**N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)**	2991-50-6	141 %	61.0-135%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2231197--056	0861_SW005_221018	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	4	53	7.55	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055)							
0861_SD015_221018, 0861_SD016_221018, 0861_SD034_221018, 0861_SD018_221018, 0861_SD020_221018, 0861_QC284_221018, 0861_SD005_221018, 0861_QC183_221018, 0861_QC527_221018, 0861_SD004_221018	**18-Oct-2022**	**----**	----	----	**24-Oct-2022**	01-Nov-2022	✓
HDPE Soil Jar (EA055)							
0861_SD088_221019, 0861_QC184_221019	**19-Oct-2022**	**----**	----	----	**01-Nov-2022**	02-Nov-2022	✓
HDPE Soil Jar (EA055)							
0861_SD047_221019, 0861_SD094_221019, 0861_SD036_221019, 0861_SD049_221019, 0861_QC186_221019, 0861_SD089_221019, 0861_SD052_221019	**19-Oct-2022**	**----**	----	----	**24-Oct-2022**	02-Nov-2022	✓
HDPE Soil Jar (EA055)							
0861_SD041_221020, 0861_QC188_221020, 0861_SD051_221020, 0861_SD099_221020, 0861_SD100_221020	**20-Oct-2022**	**----**	----	----	**24-Oct-2022**	03-Nov-2022	✓
HDPE Soil Jar (EA055)							
0861_SD091_221021, 0861_SD090_221021, 0861_SD021_221021, 0861_SD037_221021, 0861_SD059_221021, 0861_SD030_221021, 0861_SD002_221021, 0861_SD056_221021, 0861_QC190_221021, 0861_SD027_221021, 0861_SD003_221021	**21-Oct-2022**	**----**	----	----	**24-Oct-2022**	04-Nov-2022	✓
HDPE Soil Jar (EA055)							
0861_SD028_221018, 0861_SD048_221019	**21-Oct-2022**	**----**	----	----	**25-Oct-2022**	04-Nov-2022	✓
Soil Glass Jar - Unpreserved (EA055)							
0861_QC529_221020	**19-Oct-2022**	**----**	----	----	**01-Nov-2022**	02-Nov-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD015_221018	**18-Oct-2022**	**25-Oct-2022**	16-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD016_221018, 0861_SD034_221018, 0861_SD018_221018, 0861_SD020_221018, 0861_QC284_221018, 0861_SD005_221018, 0861_QC183_221018, 0861_QC527_221018, 0861_SD004_221018	**18-Oct-2022**	**26-Oct-2022**	16-Apr-2023	✓	**02-Nov-2022**	05-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD047_221019, 0861_SD094_221019, 0861_SD036_221019	**19-Oct-2022**	**25-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD049_221019, 0861_QC186_221019, 0861_SD089_221019, 0861_SD052_221019	**19-Oct-2022**	**26-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	05-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD088_221019, 0861_QC184_221019	**19-Oct-2022**	**27-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	06-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD041_221020, 0861_QC188_221020, 0861_SD051_221020, 0861_SD099_221020, 0861_SD100_221020	**20-Oct-2022**	**25-Oct-2022**	18-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD091_221021, 0861_SD090_221021, 0861_SD021_221021, 0861_SD037_221021, 0861_SD059_221021, 0861_SD030_221021, 0861_SD002_221021, 0861_SD056_221021, 0861_QC190_221021, 0861_SD027_221021, 0861_SD003_221021	**21-Oct-2022**	**25-Oct-2022**	19-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD028_221018, 0861_SD048_221019	**21-Oct-2022**	**26-Oct-2022**	19-Apr-2023	✓	**28-Oct-2022**	05-Dec-2022	✓
Soil Glass Jar - Unpreserved (EP231X) 0861_QC529_221020	**19-Oct-2022**	**27-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	06-Dec-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0861_SD015_221018	**18-Oct-2022**	**25-Oct-2022**	16-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD016_221018, 0861_SD034_221018, 0861_SD018_221018, 0861_SD020_221018, 0861_QC284_221018, 0861_SD005_221018, 0861_QC183_221018, 0861_QC527_221018, 0861_SD004_221018	**18-Oct-2022**	**26-Oct-2022**	16-Apr-2023	✓	**02-Nov-2022**	05-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD047_221019, 0861_SD094_221019, 0861_SD036_221019	**19-Oct-2022**	**25-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD049_221019, 0861_QC186_221019, 0861_SD089_221019, 0861_SD052_221019	**19-Oct-2022**	**26-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	05-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD088_221019, 0861_QC184_221019	**19-Oct-2022**	**27-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	06-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD041_221020, 0861_QC188_221020, 0861_SD051_221020, 0861_SD099_221020, 0861_SD100_221020	**20-Oct-2022**	**25-Oct-2022**	18-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD091_221021, 0861_SD090_221021, 0861_SD021_221021, 0861_SD037_221021, 0861_SD059_221021, 0861_SD030_221021, 0861_SD002_221021, 0861_SD056_221021, 0861_QC190_221021, 0861_SD027_221021, 0861_SD003_221021	**21-Oct-2022**	**25-Oct-2022**	19-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD028_221018, 0861_SD048_221019	**21-Oct-2022**	**26-Oct-2022**	19-Apr-2023	✓	**28-Oct-2022**	05-Dec-2022	✓
Soil Glass Jar - Unpreserved (EP231X) 0861_QC529_221020	**19-Oct-2022**	**27-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	06-Dec-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0861_SD015_221018	**18-Oct-2022**	**25-Oct-2022**	16-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD016_221018, 0861_SD034_221018, 0861_SD018_221018, 0861_SD020_221018, 0861_QC284_221018, 0861_SD005_221018, 0861_QC183_221018, 0861_QC527_221018, 0861_SD004_221018	**18-Oct-2022**	**26-Oct-2022**	16-Apr-2023	✓	**02-Nov-2022**	05-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD047_221019, 0861_SD094_221019, 0861_SD036_221019	**19-Oct-2022**	**25-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD049_221019, 0861_QC186_221019, 0861_SD089_221019, 0861_SD052_221019	**19-Oct-2022**	**26-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	05-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD088_221019, 0861_QC184_221019	**19-Oct-2022**	**27-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	06-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD041_221020, 0861_QC188_221020, 0861_SD051_221020, 0861_SD099_221020, 0861_SD100_221020	**20-Oct-2022**	**25-Oct-2022**	18-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD091_221021, 0861_SD090_221021, 0861_SD021_221021, 0861_SD037_221021, 0861_SD059_221021, 0861_SD030_221021, 0861_SD002_221021, 0861_SD056_221021, 0861_QC190_221021, 0861_SD027_221021, 0861_SD003_221021	**21-Oct-2022**	**25-Oct-2022**	19-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD028_221018, 0861_SD048_221019	**21-Oct-2022**	**26-Oct-2022**	19-Apr-2023	✓	**28-Oct-2022**	05-Dec-2022	✓
Soil Glass Jar - Unpreserved (EP231X) 0861_QC529_221020	**19-Oct-2022**	**27-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	06-Dec-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD015_221018	**18-Oct-2022**	**25-Oct-2022**	16-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD016_221018, 0861_SD034_221018, 0861_SD018_221018, 0861_SD020_221018, 0861_QC284_221018, 0861_SD005_221018, 0861_QC183_221018, 0861_QC527_221018, 0861_SD004_221018	**18-Oct-2022**	**26-Oct-2022**	16-Apr-2023	✓	**02-Nov-2022**	05-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD047_221019, 0861_SD094_221019, 0861_SD036_221019	**19-Oct-2022**	**25-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD049_221019, 0861_QC186_221019, 0861_SD089_221019, 0861_SD052_221019	**19-Oct-2022**	**26-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	05-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD088_221019, 0861_QC184_221019	**19-Oct-2022**	**27-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	06-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD041_221020, 0861_QC188_221020, 0861_SD051_221020, 0861_SD099_221020, 0861_SD100_221020	**20-Oct-2022**	**25-Oct-2022**	18-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD091_221021, 0861_SD090_221021, 0861_SD021_221021, 0861_SD037_221021, 0861_SD059_221021, 0861_SD030_221021, 0861_SD002_221021, 0861_SD056_221021, 0861_QC190_221021, 0861_SD027_221021, 0861_SD003_221021	**21-Oct-2022**	**25-Oct-2022**	19-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD028_221018, 0861_SD048_221019	**21-Oct-2022**	**26-Oct-2022**	19-Apr-2023	✓	**28-Oct-2022**	05-Dec-2022	✓
Soil Glass Jar - Unpreserved (EP231X) 0861_QC529_221020	**19-Oct-2022**	**27-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	06-Dec-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0861_SD015_221018	**18-Oct-2022**	**25-Oct-2022**	16-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD016_221018, 0861_SD034_221018, 0861_SD018_221018, 0861_SD020_221018, 0861_QC284_221018, 0861_SD005_221018, 0861_QC183_221018, 0861_QC527_221018, 0861_SD004_221018	**18-Oct-2022**	**26-Oct-2022**	16-Apr-2023	✓	**02-Nov-2022**	05-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD047_221019, 0861_SD094_221019, 0861_SD036_221019	**19-Oct-2022**	**25-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD049_221019, 0861_QC186_221019, 0861_SD089_221019, 0861_SD052_221019	**19-Oct-2022**	**26-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	05-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD088_221019, 0861_QC184_221019	**19-Oct-2022**	**27-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	06-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD041_221020, 0861_QC188_221020, 0861_SD051_221020, 0861_SD099_221020, 0861_SD100_221020	**20-Oct-2022**	**25-Oct-2022**	18-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD091_221021, 0861_SD090_221021, 0861_SD021_221021, 0861_SD037_221021, 0861_SD059_221021, 0861_SD030_221021, 0861_SD002_221021, 0861_SD056_221021, 0861_QC190_221021, 0861_SD027_221021, 0861_SD003_221021	**21-Oct-2022**	**25-Oct-2022**	19-Apr-2023	✓	**02-Nov-2022**	04-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD028_221018, 0861_SD048_221019	**21-Oct-2022**	**26-Oct-2022**	19-Apr-2023	✓	**28-Oct-2022**	05-Dec-2022	✓
Soil Glass Jar - Unpreserved (EP231X) 0861_QC529_221020	**19-Oct-2022**	**27-Oct-2022**	17-Apr-2023	✓	**02-Nov-2022**	06-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_SW009_221018, 0861_SW004_221018, 0861_SW015_221018	**18-Oct-2022**	**02-Nov-2022**	16-Apr-2023	✓	**03-Nov-2022**	16-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW016_221018, 0861_SW034_221018, 0861_SW018_221018, 0861_SW020_221018, 0861_QC354_221018, 0861_QC459_221018, 0861_QC185_221018, 0861_SW005_221018, 0861_QC182_221018	**18-Oct-2022**	**04-Nov-2022**	16-Apr-2023	✓	**04-Nov-2022**	16-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC356_221020, 0861_QC461_221020	**19-Oct-2022**	**01-Nov-2022**	17-Apr-2023	✓	**01-Nov-2022**	17-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW049_221019, 0861_QC187_221019, 0861_QC287_221019, 0861_SW089_221019, 0861_SW052_221019	**19-Oct-2022**	**02-Nov-2022**	17-Apr-2023	✓	**03-Nov-2022**	17-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW088_221019, 0861_SW047_221019, 0861_SW094_221019, 0861_SW036_221019, 0861_QC355_221020	**19-Oct-2022**	**04-Nov-2022**	17-Apr-2023	✓	**04-Nov-2022**	17-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW041_221020, 0861_QC189_221020, 0861_MW055S_221020, 0861_MW055D_221020, 0861_SW051_221020, 0861_SW099_221020, 0861_SW100_221020	**20-Oct-2022**	**04-Nov-2022**	18-Apr-2023	✓	**04-Nov-2022**	18-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW091_221021, 0861_SW090_221021, 0861_SW021_221021, 0861_SW037_221021, 0861_SW059_221021, 0861_SW030_221021, 0861_SW002_221021, 0861_SW056_221021, 0861_QC191_221021, 0861_SW027_221021, 0861_SW003_221021, 0861_SW048_221019	**21-Oct-2022**	**04-Nov-2022**	19-Apr-2023	✓	**04-Nov-2022**	19-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0861_SW009_221018, 0861_SW004_221018, 0861_SW015_221018	**18-Oct-2022**	**02-Nov-2022**	16-Apr-2023	✓	**03-Nov-2022**	16-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW016_221018, 0861_SW034_221018, 0861_SW018_221018, 0861_SW020_221018, 0861_QC354_221018, 0861_QC459_221018, 0861_QC185_221018, 0861_SW005_221018, 0861_QC182_221018	**18-Oct-2022**	**04-Nov-2022**	16-Apr-2023	✓	**04-Nov-2022**	16-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC356_221020, 0861_QC461_221020	**19-Oct-2022**	**01-Nov-2022**	17-Apr-2023	✓	**01-Nov-2022**	17-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW049_221019, 0861_QC187_221019, 0861_QC287_221019, 0861_SW089_221019, 0861_SW052_221019	**19-Oct-2022**	**02-Nov-2022**	17-Apr-2023	✓	**03-Nov-2022**	17-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW088_221019, 0861_SW047_221019, 0861_SW094_221019, 0861_SW036_221019, 0861_QC355_221020	**19-Oct-2022**	**04-Nov-2022**	17-Apr-2023	✓	**04-Nov-2022**	17-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW041_221020, 0861_QC189_221020, 0861_MW055S_221020, 0861_MW055D_221020, 0861_SW051_221020, 0861_SW099_221020, 0861_SW100_221020	**20-Oct-2022**	**04-Nov-2022**	18-Apr-2023	✓	**04-Nov-2022**	18-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW091_221021, 0861_SW090_221021, 0861_SW021_221021, 0861_SW037_221021, 0861_SW059_221021, 0861_SW030_221021, 0861_SW002_221021, 0861_SW056_221021, 0861_QC191_221021, 0861_SW027_221021, 0861_SW003_221021, 0861_SW048_221019	**21-Oct-2022**	**04-Nov-2022**	19-Apr-2023	✓	**04-Nov-2022**	19-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0861_SW009_221018, 0861_SW004_221018, 0861_SW015_221018	**18-Oct-2022**	**02-Nov-2022**	16-Apr-2023	✓	**03-Nov-2022**	16-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW016_221018, 0861_SW034_221018, 0861_SW018_221018, 0861_SW020_221018, 0861_QC354_221018, 0861_QC459_221018, 0861_QC185_221018, 0861_SW005_221018, 0861_QC182_221018	**18-Oct-2022**	**04-Nov-2022**	16-Apr-2023	✓	**04-Nov-2022**	16-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC356_221020, 0861_QC461_221020	**19-Oct-2022**	**01-Nov-2022**	17-Apr-2023	✓	**01-Nov-2022**	17-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW049_221019, 0861_QC187_221019, 0861_QC287_221019, 0861_SW089_221019, 0861_SW052_221019	**19-Oct-2022**	**02-Nov-2022**	17-Apr-2023	✓	**03-Nov-2022**	17-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW088_221019, 0861_SW047_221019, 0861_SW094_221019, 0861_SW036_221019, 0861_QC355_221020	**19-Oct-2022**	**04-Nov-2022**	17-Apr-2023	✓	**04-Nov-2022**	17-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW041_221020, 0861_QC189_221020, 0861_MW055S_221020, 0861_MW055D_221020, 0861_SW051_221020, 0861_SW099_221020, 0861_SW100_221020	**20-Oct-2022**	**04-Nov-2022**	18-Apr-2023	✓	**04-Nov-2022**	18-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW091_221021, 0861_SW090_221021, 0861_SW021_221021, 0861_SW037_221021, 0861_SW059_221021, 0861_SW030_221021, 0861_SW002_221021, 0861_SW056_221021, 0861_QC191_221021, 0861_SW027_221021, 0861_SW003_221021, 0861_SW048_221019	**21-Oct-2022**	**04-Nov-2022**	19-Apr-2023	✓	**04-Nov-2022**	19-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_SW009_221018, 0861_SW004_221018, 0861_SW015_221018	**18-Oct-2022**	**02-Nov-2022**	16-Apr-2023	✓	**03-Nov-2022**	16-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW016_221018, 0861_SW034_221018, 0861_SW018_221018, 0861_SW020_221018, 0861_QC354_221018, 0861_QC459_221018, 0861_QC185_221018, 0861_SW005_221018, 0861_QC182_221018	**18-Oct-2022**	**04-Nov-2022**	16-Apr-2023	✓	**04-Nov-2022**	16-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC356_221020, 0861_QC461_221020	**19-Oct-2022**	**01-Nov-2022**	17-Apr-2023	✓	**01-Nov-2022**	17-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW049_221019, 0861_QC187_221019, 0861_QC287_221019, 0861_SW089_221019, 0861_SW052_221019	**19-Oct-2022**	**02-Nov-2022**	17-Apr-2023	✓	**03-Nov-2022**	17-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW088_221019, 0861_SW047_221019, 0861_SW094_221019, 0861_SW036_221019, 0861_QC355_221020	**19-Oct-2022**	**04-Nov-2022**	17-Apr-2023	✓	**04-Nov-2022**	17-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW041_221020, 0861_QC189_221020, 0861_MW055S_221020, 0861_MW055D_221020, 0861_SW051_221020, 0861_SW099_221020, 0861_SW100_221020	**20-Oct-2022**	**04-Nov-2022**	18-Apr-2023	✓	**04-Nov-2022**	18-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW091_221021, 0861_SW090_221021, 0861_SW021_221021, 0861_SW037_221021, 0861_SW059_221021, 0861_SW030_221021, 0861_SW002_221021, 0861_SW056_221021, 0861_QC191_221021, 0861_SW027_221021, 0861_SW003_221021, 0861_SW048_221019	**21-Oct-2022**	**04-Nov-2022**	19-Apr-2023	✓	**04-Nov-2022**	19-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0861_SW009_221018, 0861_SW004_221018, 0861_SW015_221018	**18-Oct-2022**	**02-Nov-2022**	16-Apr-2023	✓	**03-Nov-2022**	16-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW016_221018, 0861_SW034_221018, 0861_SW018_221018, 0861_SW020_221018, 0861_QC354_221018, 0861_QC459_221018, 0861_QC185_221018, 0861_SW005_221018, 0861_QC182_221018	**18-Oct-2022**	**04-Nov-2022**	16-Apr-2023	✓	**04-Nov-2022**	16-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC356_221020, 0861_QC461_221020	**19-Oct-2022**	**01-Nov-2022**	17-Apr-2023	✓	**01-Nov-2022**	17-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW049_221019, 0861_QC187_221019, 0861_QC287_221019, 0861_SW089_221019, 0861_SW052_221019	**19-Oct-2022**	**02-Nov-2022**	17-Apr-2023	✓	**03-Nov-2022**	17-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW088_221019, 0861_SW047_221019, 0861_SW094_221019, 0861_SW036_221019, 0861_QC355_221020	**19-Oct-2022**	**04-Nov-2022**	17-Apr-2023	✓	**04-Nov-2022**	17-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW041_221020, 0861_QC189_221020, 0861_MW055S_221020, 0861_MW055D_221020, 0861_SW051_221020, 0861_SW099_221020, 0861_SW100_221020	**20-Oct-2022**	**04-Nov-2022**	18-Apr-2023	✓	**04-Nov-2022**	18-Apr-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW091_221021, 0861_SW090_221021, 0861_SW021_221021, 0861_SW037_221021, 0861_SW059_221021, 0861_SW030_221021, 0861_SW002_221021, 0861_SW056_221021, 0861_QC191_221021, 0861_SW027_221021, 0861_SW003_221021, 0861_SW048_221019	**21-Oct-2022**	**04-Nov-2022**	19-Apr-2023	✓	**04-Nov-2022**	19-Apr-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	7	48	**14.58**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	8	64	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	64	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	64	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	64	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	53	**7.55**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	53	**7.55**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	53	**7.55**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	53	**5.66**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2231202**		
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0861_PFASOMP	Page	: 1 of 3
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Oct-2022 17:39	Issue Date	: 24-Nov-2022
Client Requested Due Date	: 01-Nov-2022	Scheduled Reporting Date	: **01-Nov-2022**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 8.7°, 2.3°, 2.0°C - Ice present
Receipt Detail	: Medium esky	No. of samples received / analysed	: 18 / 17

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***SRN Reissued 25/10/2022: To acknowledge request for updated Project ID***
- ***SRN Reissued 24/11/2022: To acknowledge requeest for updated Sample ID on Sample 086.***
- **For sample point 0861_QC532_221021, the requested analysis has not been assigned as the container submitted was not appropriate foer the requested PFAS analysis. For further information, please contact client services at ALSEnviro.Brisbane@alsglobal.com**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2231202-001	20-Oct-2022 00:00	0861_SD043_221020	✓	✓
EB2231202-003	20-Oct-2022 00:00	0861_SD039_221020	✓	✓
EB2231202-005	20-Oct-2022 00:00	0861_SD025_221020	✓	✓
EB2231202-008	21-Oct-2022 00:00	0861_QC531_221021	✓	✓
EB2231202-011	20-Oct-2022 00:00	0861_SD098_221020	✓	✓
EB2231202-013	20-Oct-2022 00:00	0861_SD026_221020	✓	✓
EB2231202-015	20-Oct-2022 00:00	0861_SD040_221020	✓	✓
EB2231202-018	20-Oct-2022 00:00	0861_SD045_221020	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) WATER No analysis requested	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2231202-002	20-Oct-2022 00:00	0861_SW043_221020		✓
EB2231202-004	20-Oct-2022 00:00	0861_SW039_221020		✓
EB2231202-006	20-Oct-2022 00:00	0861_SW025_221020		✓
EB2231202-007	21-Oct-2022 00:00	0861_QC532_221021	✓	
EB2231202-009	21-Oct-2022 00:00	0861_QC462_221021		✓
EB2231202-010	21-Oct-2022 00:00	0861_QC357_221021		✓
EB2231202-012	20-Oct-2022 00:00	0861_SW098_221020		✓
EB2231202-014	20-Oct-2022 00:00	0861_SW026_221020		✓
EB2231202-016	20-Oct-2022 00:00	0861_SW040_221020		✓
EB2231202-017	20-Oct-2022 00:00	0861_SW045_221020		✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- *AU Certificate of Analysis - NATA (COA)	Email	derp.labreports@esdat.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	derp.labreports@esdat.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	derp.labreports@esdat.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	derp.labreports@esdat.com.au
- Chain of Custody (CoC) (COC)	Email	derp.labreports@esdat.com.au
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	derp.labreports@esdat.com.au
- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2231202**	Page	: 1 of 11
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: +[redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 21-Oct-2022 17:39
Order number	: 60612563 3.1	Date Analysis Commenced	: 24-Oct-2022
C-O-C number	: ----	Issue Date	: 24-Nov-2022 10:46
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 18		
No. of samples analysed	: 17		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment (24/11/2022): This report has been amended as a result of a request to change sample identification numbers (IDs) received from [redacted] on 23/11/22, for samples EB2231202 086. All analysis results are as per the previous report.
- EP231X PFAS: The LOR values of particular analytes for particular samples have been raised due to matrix interferences.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_SD043_221020	0861_SD039_221020	0861_SD025_221020	0861_QC531_221021	0861_SD098_221020
			Sampling date / time	20-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00	21-Oct-2022 00:00	20-Oct-2022 00:00
Compound	CAS Number	LOR	Unit	EB2231202-001	EB2231202-003	EB2231202-005	EB2231202-008	EB2231202-011
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**42.0**	**38.9**	**54.0**	<0.1	**32.0**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0008	<0.0010	<0.0004	<0.0002	**0.0022**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD043_221020	0861_SD039_221020	0861_SD025_221020	0861_QC531_221021	0861_SD098_221020
				Sampling date / time	20-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00	21-Oct-2022 00:00	20-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231202-001	EB2231202-003	EB2231202-005	EB2231202-008	EB2231202-011
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	**0.0022**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	**0.0022**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	**0.0022**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**87.5**	**102**	**112**	**102**	**106**
13C8-PFOA	----	0.0002	%		**108**	**104**	**110**	**109**	**106**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD026_221020	0861_SD040_221020	0861_SD045_221020	----	----
				Sampling date / time	20-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2231202-013	EB2231202-015	EB2231202-018	--------	--------
					Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**41.4**	**41.9**	**48.8**	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0004	<0.0002	<0.0002	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0061**	<0.0034	<0.0040	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD026_221020	0861_SD040_221020	0861_SD045_221020	----	----
				Sampling date / time	20-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2231202-013	EB2231202-015	EB2231202-018	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0061**	<0.0002	<0.0002	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0061**	<0.0002	<0.0002	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0061**	<0.0002	<0.0002	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**94.0**	**88.5**	**95.0**	----	----
13C8-PFOA	----	0.0002	%		**119**	**114**	**108**	----	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW043_221020	0861_SW039_221020	0861_SW025_221020	0861_QC462_221021	0861_QC357_221021
				Sampling date / time	20-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00
					EB2231202-002	EB2231202-004	EB2231202-006	EB2231202-009	EB2231202-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW043_221020	0861_SW039_221020	0861_SW025_221020	0861_QC462_221021	0861_QC357_221021
				Sampling date / time	20-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00	21-Oct-2022 00:00	21-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231202-002	EB2231202-004	EB2231202-006	EB2231202-009	EB2231202-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.2**	**92.5**	**104**	**110**	**101**
13C8-PFOA	----	0.02	%		**104**	**103**	**105**	**104**	**103**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW098_221020	0861_SW026_221020	0861_SW040_221020	0861_SW045_221020	----
				Sampling date / time	20-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00	----
Compound	CAS Number	LOR	Unit		EB2231202-012	EB2231202-014	EB2231202-016	EB2231202-017	--------
					Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.03**	**0.03**	<0.02	<0.02	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.02**	**0.03**	<0.02	<0.02	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.18**	**0.23**	**0.14**	**0.07**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.25**	**0.35**	**0.21**	**0.10**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.02**	<0.02	<0.02	<0.02	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.07**	**0.06**	**0.04**	<0.02	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.02**	**0.02**	<0.01	<0.01	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW098_221020	0861_SW026_221020	0861_SW040_221020	0861_SW045_221020	----
				Sampling date / time	20-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00	20-Oct-2022 00:00	----
Compound	CAS Number	LOR	Unit		EB2231202-012	EB2231202-014	EB2231202-016	EB2231202-017	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.59**	**0.72**	**0.39**	**0.17**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.43**	**0.58**	**0.35**	**0.17**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.57**	**0.69**	**0.39**	**0.17**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**96.2**	**92.0**	**98.5**	**96.2**	----
13C8-PFOA	----	0.02	%		**104**	**107**	**104**	**105**	----

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2231202**	Page	: 1 of 8
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: +[redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 21-Oct-2022
Order number	: 60612563 3.1	Date Analysis Commenced	: 24-Oct-2022
C-O-C number	: ----	Issue Date	: 24-Nov-2022
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 18		
No. of samples analysed	: 17		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4656227)									
EB2231202-001	0861_SD043_221020	EA055: Moisture Content	----	0.1	%	42.0	45.5	8.1	0% - 20%
ET2205495-038	Anonymous	EA055: Moisture Content	----	0.1	%	35.1	36.8	4.7	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4656226)									
EB2231036-011	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0005	0.0006	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0005	0.0006	26.3	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
ET2205495-035	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0004	<0.0002	66.7	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0021	0.0014	35.8	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0004	<0.0002	66.7	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0201	0.0174	14.2	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4656226)									
EB2231036-011	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4656226) - continued									
EB2231036-011	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
ET2205495-035	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0004	0.0003	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0004	<0.0002	66.7	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0006	0.0005	22.9	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	0.0003	0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4656226)									
EB2231036-011	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ET2205495-035	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4656226)									
EB2231036-011	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
ET2205495-035	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4656226)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	98.2	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	84.2	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	95.8	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	91.6	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	97.4	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	90.0	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4656226)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	88.3	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.0	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.8	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.0	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.8	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	94.8	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	100	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4656226)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	105	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	98.6	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	86.8	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	98.1	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	116	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	96.0	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4656226)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	91.9	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	124	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	91.2	65.0	137

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4656226) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	92.5	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4658536)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	112	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	117	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	115	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	124	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	113	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	99.4	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4658536)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	107	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	104	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	122	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	121	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	115	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	107	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	110	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	104	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	112	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	108	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	108	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4658536)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	133	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	120	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	105	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	101	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	104	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	127	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	103	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4658536)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	109	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	109	64.0	140

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	LCS: Spike Recovery (%)	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4658536) - continued								
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	127	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	116	64.2	133
EP231P: PFAS Sums (QCLot: 4658536)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4656226)							
EB2231202-001	0861_SD043_221020	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	99.5	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	105	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	110	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	101	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	85.3	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	112	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4656226)							
EB2231202-001	0861_SD043_221020	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	92.8	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	92.8	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	105	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	108	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	111	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	99.2	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	106	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	110	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	102	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	110	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	104	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4656226)							
EB2231202-001	0861_SD043_221020	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	109	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	99.4	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4656226) - continued							
EB2231202-001	0861_SD043_221020	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	100	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	102	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	103	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	110	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	102	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4656226)							
EB2231202-001	0861_SD043_221020	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	110	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	110	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	111	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	72.5	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2231202**	Page	: 1 of 6
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 21-Oct-2022
Site	: ----	Issue Date	: 24-Nov-2022
Sampler	: [redacted]	No. of samples received	: 18
Order number	: 60612563 3.1	No. of samples analysed	: 17

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	20	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)	*Sample Date*	*Extraction / Preparation* Date extracted	Due for extraction	Evaluation	*Analysis* Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) 0861_SD043_221020, 0861_SD039_221020, 0861_SD025_221020, 0861_SD098_221020, 0861_SD026_221020, 0861_SD040_221020, 0861_SD045_221020	**20-Oct-2022**	**----**	----	----	**24-Oct-2022**	03-Nov-2022	✓
HDPE Soil Jar (EA055) 0861_QC531_221021	**21-Oct-2022**	**----**	----	----	**24-Oct-2022**	04-Nov-2022	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD043_221020, 0861_SD039_221020, 0861_SD025_221020, 0861_SD098_221020, 0861_SD026_221020, 0861_SD040_221020, 0861_SD045_221020	**20-Oct-2022**	**26-Oct-2022**	18-Apr-2023	✓	**28-Oct-2022**	05-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_QC531_221021	**21-Oct-2022**	**26-Oct-2022**	19-Apr-2023	✓	**28-Oct-2022**	05-Dec-2022	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0861_SD043_221020, 0861_SD039_221020, 0861_SD025_221020, 0861_SD098_221020, 0861_SD026_221020, 0861_SD040_221020, 0861_SD045_221020	**20-Oct-2022**	**26-Oct-2022**	18-Apr-2023	✓	**28-Oct-2022**	05-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_QC531_221021	**21-Oct-2022**	**26-Oct-2022**	19-Apr-2023	✓	**28-Oct-2022**	05-Dec-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X)							
0861_SD043_221020, 0861_SD039_221020, 0861_SD025_221020, 0861_SD098_221020, 0861_SD026_221020, 0861_SD040_221020, 0861_SD045_221020	**20-Oct-2022**	**26-Oct-2022**	18-Apr-2023	✓	**28-Oct-2022**	05-Dec-2022	✓
HDPE Soil Jar (EP231X)							
0861_QC531_221021	**21-Oct-2022**	**26-Oct-2022**	19-Apr-2023	✓	**28-Oct-2022**	05-Dec-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0861_SD043_221020, 0861_SD039_221020, 0861_SD025_221020, 0861_SD098_221020, 0861_SD026_221020, 0861_SD040_221020, 0861_SD045_221020	**20-Oct-2022**	**26-Oct-2022**	18-Apr-2023	✓	**28-Oct-2022**	05-Dec-2022	✓
HDPE Soil Jar (EP231X)							
0861_QC531_221021	**21-Oct-2022**	**26-Oct-2022**	19-Apr-2023	✓	**28-Oct-2022**	05-Dec-2022	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X)							
0861_SD043_221020, 0861_SD039_221020, 0861_SD025_221020, 0861_SD098_221020, 0861_SD026_221020, 0861_SD040_221020, 0861_SD045_221020	**20-Oct-2022**	**26-Oct-2022**	18-Apr-2023	✓	**28-Oct-2022**	05-Dec-2022	✓
HDPE Soil Jar (EP231X)							
0861_QC531_221021	**21-Oct-2022**	**26-Oct-2022**	19-Apr-2023	✓	**28-Oct-2022**	05-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_SW043_221020, 0861_SW039_221020, 0861_SW025_221020, 0861_SW098_221020, 0861_SW026_221020, 0861_SW040_221020, 0861_SW045_221020	**20-Oct-2022**	**31-Oct-2022**	18-Apr-2023	✓	**31-Oct-2022**	18-Apr-2023	✓
HDPE (no PTFE) (EP231X)							
0861_QC462_221021, 0861_QC357_221021	**21-Oct-2022**	**31-Oct-2022**	19-Apr-2023	✓	**31-Oct-2022**	19-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0861_SW043_221020,	0861_SW039_221020,	**20-Oct-2022**	**31-Oct-2022**	18-Apr-2023	✓	**31-Oct-2022**	18-Apr-2023	✓
0861_SW025_221020,	0861_SW098_221020,							
0861_SW026_221020,	0861_SW040_221020,							
0861_SW045_221020								
HDPE (no PTFE) (EP231X)								
0861_QC462_221021,	0861_QC357_221021	**21-Oct-2022**	**31-Oct-2022**	19-Apr-2023	✓	**31-Oct-2022**	19-Apr-2023	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0861_SW043_221020,	0861_SW039_221020,	**20-Oct-2022**	**31-Oct-2022**	18-Apr-2023	✓	**31-Oct-2022**	18-Apr-2023	✓
0861_SW025_221020,	0861_SW098_221020,							
0861_SW026_221020,	0861_SW040_221020,							
0861_SW045_221020								
HDPE (no PTFE) (EP231X)								
0861_QC462_221021,	0861_QC357_221021	**21-Oct-2022**	**31-Oct-2022**	19-Apr-2023	✓	**31-Oct-2022**	19-Apr-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0861_SW043_221020,	0861_SW039_221020,	**20-Oct-2022**	**31-Oct-2022**	18-Apr-2023	✓	**31-Oct-2022**	18-Apr-2023	✓
0861_SW025_221020,	0861_SW098_221020,							
0861_SW026_221020,	0861_SW040_221020,							
0861_SW045_221020								
HDPE (no PTFE) (EP231X)								
0861_QC462_221021,	0861_QC357_221021	**21-Oct-2022**	**31-Oct-2022**	19-Apr-2023	✓	**31-Oct-2022**	19-Apr-2023	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0861_SW043_221020,	0861_SW039_221020,	**20-Oct-2022**	**31-Oct-2022**	18-Apr-2023	✓	**31-Oct-2022**	18-Apr-2023	✓
0861_SW025_221020,	0861_SW098_221020,							
0861_SW026_221020,	0861_SW040_221020,							
0861_SW045_221020								
HDPE (no PTFE) (EP231X)								
0861_QC462_221021,	0861_QC357_221021	**21-Oct-2022**	**31-Oct-2022**	19-Apr-2023	✓	**31-Oct-2022**	19-Apr-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	20	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2231825**		
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: +[redacted]	Telephone	: [redacted]
Facsimile	: +[redacted]	Facsimile	: [redacted]
Project	: QLD_0861_PFASOMP	Page	: 1 of 4
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 27-Oct-2022 09:35	Issue Date	: 24-Nov-2022
Client Requested Due Date	: 08-Nov-2022	Scheduled Reporting Date	: **08-Nov-2022**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 5.5°C, 3.8°C - Ice present
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 61 / 57

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***SRN Reissued 31/10/2022: To acknowledge request for updated sample IDs on ALS samples 062-065.***
- ***SRN Reissued 31/10/2022: To update formating of sample ID's 062-065.***
- ***SRN Reissued 24/11/2022: To acknowledge request for updated Sample ID's 025-043.***
- **Please be advised that samples QC533, QCQC534, QC535, QC536 were not received at the laboratory (denoted SNR on the scanned COC).**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Extra samples were received labelled TRIP BLANK samples #62-65 and have been placed on hold. If testing is required on this sample, please contact ALS Client Services at ALSEnviro.Brisbane@alsglobal.com**
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- **Samples QC292, QC293,QC294,QC295,QC296, QC297 have been forwarded to NMI , as requested. Please note that this will incur a freight forwarding fee.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2231825-001	24-Oct-2022 00:00	0861_SD053_221024		✓	✓
EB2231825-003	24-Oct-2022 00:00	0861_SD064_221024		✓	✓
EB2231825-005	24-Oct-2022 00:00	0861_SD038_221024		✓	✓
EB2231825-007	24-Oct-2022 00:00	0861_SD079_221024		✓	✓
EB2231825-009	24-Oct-2022 00:00	0861_SD080_221024		✓	✓
EB2231825-011	24-Oct-2022 00:00	0861_SD067_221024		✓	✓
EB2231825-034	25-Oct-2022 00:00	0861_SD033_221025		✓	✓
EB2231825-035	25-Oct-2022 00:00	0861_QC194_221025		✓	✓
EB2231825-044	26-Oct-2022 00:00	0861_SD008_221026		✓	✓
EB2231825-062	14-Oct-2022 00:00	0861_QC533_221024	✓		
EB2231825-063	14-Oct-2022 00:00	0861_QC534_221024	✓		

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) WATER No analysis requested	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2231825-002	24-Oct-2022 00:00	0861_SW053_221024		✓
EB2231825-004	24-Oct-2022 00:00	0861_SW064_221024		✓
EB2231825-006	24-Oct-2022 00:00	0861_SW038_221024		✓
EB2231825-008	24-Oct-2022 00:00	0861_SW079_221024		✓
EB2231825-010	24-Oct-2022 00:00	0861_SW080_221024		✓
EB2231825-012	24-Oct-2022 00:00	0861_SW067_221024		✓
EB2231825-013	24-Oct-2022 00:00	0861_MW012_221024		✓
EB2231825-014	24-Oct-2022 00:00	0861_QC192_221024		✓
EB2231825-015	24-Oct-2022 00:00	0861_MW026_221024		✓
EB2231825-016	24-Oct-2022 00:00	0861_MW037_221024		✓
EB2231825-017	24-Oct-2022 00:00	0861_MW032_221024		✓
EB2231825-018	24-Oct-2022 00:00	0861_MW050_221024		✓

			(On Hold) WATER No analysis requested	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2231825-019	24-Oct-2022 00:00	0861_MW005_221024		✓
EB2231825-020	24-Oct-2022 00:00	0861_QC358_221024		✓
EB2231825-021	24-Oct-2022 00:00	0861_QC463_221024		✓
EB2231825-022	24-Oct-2022 00:00	0861_MW025_221024		✓
EB2231825-025	25-Oct-2022 00:00	0861_QC193_221025		✓
EB2231825-026	25-Oct-2022 00:00	0861_MW036_221025		✓
EB2231825-027	25-Oct-2022 00:00	0861_MW049_221025		✓
EB2231825-028	25-Oct-2022 00:00	0861_MW048_221025		✓
EB2231825-029	25-Oct-2022 00:00	0861_MW047_221025		✓
EB2231825-030	25-Oct-2022 00:00	0861_MW020_221025		✓
EB2231825-031	25-Oct-2022 00:00	0861_MW309_221025		✓
EB2231825-032	25-Oct-2022 00:00	0861_MW046_221025		✓
EB2231825-033	25-Oct-2022 00:00	0861_MW041_221025		✓
EB2231825-036	25-Oct-2022 00:00	0861_SW033_221025		✓
EB2231825-037	25-Oct-2022 00:00	0861_QC195_221025		✓
EB2231825-038	25-Oct-2022 00:00	0861_MW043_221025		✓
EB2231825-039	25-Oct-2022 00:00	0861_QC196_221025		✓
EB2231825-040	25-Oct-2022 00:00	0861_MW031_221025		✓
EB2231825-041	25-Oct-2022 00:00	0861_MW030_221025		✓
EB2231825-042	25-Oct-2022 00:00	0861_QC359_221025		✓
EB2231825-043	25-Oct-2022 00:00	0861_QC464_221025		✓
EB2231825-045	26-Oct-2022 00:00	0861_SW008_221026		✓
EB2231825-046	26-Oct-2022 00:00	0861_MW028_221026		✓
EB2231825-047	26-Oct-2022 00:00	0861_MW029_221026		✓
EB2231825-048	26-Oct-2022 00:00	0861_MW044_221026		✓
EB2231825-049	26-Oct-2022 00:00	0861_QC197_221026		✓
EB2231825-050	26-Oct-2022 00:00	0861_MW023_221026		✓
EB2231825-051	26-Oct-2022 00:00	0861_MW006_221026		✓
EB2231825-052	26-Oct-2022 00:00	0861_MW007_221026		✓
EB2231825-053	26-Oct-2022 00:00	0861_MW002_221026		✓
EB2231825-054	26-Oct-2022 00:00	0861_MW042_221026		✓
EB2231825-055	26-Oct-2022 00:00	0861_MW033_221026		✓
EB2231825-056	26-Oct-2022 00:00	0861_MW021_221026		✓
EB2231825-057	26-Oct-2022 00:00	0861_MW024_221026		✓
EB2231825-058	26-Oct-2022 00:00	0861_QC360_221026		✓
EB2231825-059	26-Oct-2022 00:00	0861_QC465_221026		✓
EB2231825-064	14-Oct-2022 00:00	0861_QC535_221024	✓	
EB2231825-065	14-Oct-2022 00:00	0861_QC536_221024	✓	

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2231825**	Page	: 1 of 27
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: +[redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 27-Oct-2022 09:35
Order number	: 60612563 3.1	Date Analysis Commenced	: 30-Oct-2022
C-O-C number	: ----	Issue Date	: 24-Nov-2022 11:02
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 61		
No. of samples analysed	: 57		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X PFAS: Sample '0861_QC194_251025' shows poor duplicate results due to sample heterogeneity. Confirmed by visual inspection.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment (24/11/2022): This report has been amended as a result of a request to change sample identification numbers (IDs) received from [redacted] on 23/11/22, for samples EB2231825 025-043. All analysis results are as per the previous report.
- EP231X PFAS: Whole bottle extraction was not possible for particular samples. Samples required dilution prior to extraction due to matrix interference (High Sediment) LOR values have been adjusted accordingly.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SD053_221024	0861_SD064_221024	0861_SD038_221024	0861_SD079_221024	0861_SD080_221024
				Sampling date / time	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00
					EB2231825-001	EB2231825-003	EB2231825-005	EB2231825-007	EB2231825-009
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**35.8**	**53.3**	**53.6**	**69.2**	**55.1**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	**0.0016**	<0.0002	<0.0005	**0.0028**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	**0.0020**	<0.0002	**0.0009**	**0.0056**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0013**	**0.0201**	**0.0017**	**0.0199**	**0.0704**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	**0.0023**	<0.0002	**0.0030**	**0.0089**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0091**	**0.293**	**0.0212**	**0.262**	**0.597**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	**0.0041**	**0.0004**	**0.0040**	**0.0127**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.002	<0.001	<0.002	<0.005
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0005	**0.0013**	**0.0008**	**0.0038**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0004**	**0.0016**	**0.0014**	**0.0015**	**0.0078**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0005	**0.0005**	<0.0005	**0.0043**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	**0.0007**	**0.0005**	**0.0015**	**0.0100**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0005	**0.0146**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0005	**0.0004**	<0.0005	**0.0148**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0005	**0.0008**	**0.0009**	**0.0189**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		**0.0003**	**0.0015**	**0.0015**	**0.0007**	**0.0199**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0005	**0.0003**	<0.0005	**0.0097**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0012	<0.0005	<0.0012	**0.0053**
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0005	**0.0002**	**0.0006**	**0.0068**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0012	<0.0005	<0.0012	<0.0025

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD053_221024	0861_SD064_221024	0861_SD038_221024	0861_SD079_221024	0861_SD080_221024
				Sampling date / time	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231825-001	EB2231825-003	EB2231825-005	EB2231825-007	EB2231825-009
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0012	<0.0005	<0.0012	<0.0025
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0012	<0.0005	<0.0012	<0.0025
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0012	<0.0005	<0.0012	<0.0025
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0005	<0.0010
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0005	<0.0002	<0.0005	<0.0010
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0010
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	**0.0021**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	**0.0047**
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0010
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0111**	**0.327**	**0.0302**	**0.296**	**0.820**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0104**	**0.313**	**0.0229**	**0.282**	**0.667**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0108**	**0.317**	**0.0266**	**0.286**	**0.703**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**100**	**122**	**100**	**97.5**	**130**
13C8-PFOA	----	0.0002	%		**106**	**97.5**	**110**	**95.0**	**100**

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0861_SD067_221024	0861_SD033_221025	0861_QC194_221025	0861_SD008_221026	----
			Sampling date / time	24-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00	26-Oct-2022 00:00	----
Compound	CAS Number	LOR	Unit	EB2231825-011	EB2231825-034	EB2231825-035	EB2231825-044	--------
				Result	Result	Result	Result	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**67.1**	**32.7**	**33.3**	**56.0**	**----**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	**0.0037**	**0.0005**	**0.0003**	<0.0002	**----**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	**0.0043**	**0.0009**	**0.0006**	<0.0002	**----**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0481**	**0.0138**	**0.0063**	**0.0017**	**----**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	**0.0037**	**0.0009**	**0.0004**	<0.0002	**----**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.528**	**0.207**	**0.133**	**0.0224**	**----**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	**0.0197**	**0.0145**	**0.0063**	**0.0010**	**----**
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	**0.002**	<0.001	<0.001	<0.001	**----**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	**0.0050**	**0.0012**	**0.0006**	<0.0002	**----**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	**0.0136**	**0.0043**	**0.0022**	<0.0002	**----**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	**0.0015**	**0.0006**	**0.0003**	<0.0002	**----**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	**0.0026**	**0.0026**	**0.0013**	<0.0002	**----**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	**0.0018**	<0.0002	<0.0002	<0.0002	**----**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	**0.0034**	<0.0002	<0.0002	<0.0002	**----**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	**0.0061**	**0.0003**	<0.0002	**0.0002**	**----**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	**0.0100**	**0.0006**	<0.0002	<0.0002	**----**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	**0.0024**	<0.0002	<0.0002	<0.0002	**----**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0012	<0.0006	<0.0005	<0.0005	**----**
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	**0.0014**	**0.0016**	**0.0008**	<0.0002	**----**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0012	<0.0006	<0.0005	<0.0005	**----**

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD067_221024	0861_SD033_221025	0861_QC194_221025	0861_SD008_221026	----
				Sampling date / time	24-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00	26-Oct-2022 00:00	----
Compound	CAS Number	LOR	Unit		EB2231825-011	EB2231825-034	EB2231825-035	EB2231825-044	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0012	<0.0006	<0.0005	<0.0005	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0012	<0.0006	<0.0005	<0.0005	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0012	<0.0006	<0.0005	<0.0005	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0005	<0.0002	<0.0002	<0.0002	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0005	<0.0002	<0.0002	<0.0002	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.657**	**0.249**	**0.152**	**0.0253**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.576**	**0.221**	**0.139**	**0.0241**	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.604**	**0.230**	**0.144**	**0.0241**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**120**	**82.5**	**106**	**130**	----
13C8-PFOA	----	0.0002	%		**92.5**	**97.5**	**114**	**126**	----

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW053_221024	0861_SW064_221024	0861_SW038_221024	0861_SW079_221024	0861_SW080_221024
				Sampling date / time	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00
					EB2231825-002	EB2231825-004	EB2231825-006	EB2231825-008	EB2231825-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.04**	<0.02	**0.08**	<0.10
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.02**	**0.02**	<0.02	**0.08**	<0.10
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.18**	**0.24**	**0.04**	**0.74**	**0.76**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	**0.03**	<0.10
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.17**	**0.49**	**0.07**	**1.02**	**1.22**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.5
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	**0.05**	<0.10
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.04**	**0.06**	<0.02	**0.16**	<0.10
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.03**	<0.10
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.06	<0.25
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.06	<0.25
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.06	<0.25

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW053_221024	0861_SW064_221024	0861_SW038_221024	0861_SW079_221024	0861_SW080_221024
				Sampling date / time	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231825-002	EB2231825-004	EB2231825-006	EB2231825-008	EB2231825-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.06	<0.25
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.06	<0.25
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.10
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.10
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.10
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.10
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.41**	**0.85**	**0.11**	**2.19**	**1.98**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.35**	**0.73**	**0.11**	**1.76**	**1.98**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.39**	**0.83**	**0.11**	**2.08**	**1.98**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	**102**	**98.4**	**104**	**95.2**
13C8-PFOA	----	0.02	%		**107**	**106**	**107**	**104**	**109**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW067_221024	0861_MW012_221024	0861_QC192_221024	0861_MW026_221024	0861_MW037_221024
				Sampling date / time	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00
					EB2231825-012	EB2231825-013	EB2231825-014	EB2231825-015	EB2231825-016
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.52**	<0.02	<0.02	<0.02	**1.43**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.47**	<0.02	<0.02	<0.02	**1.26**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**3.48**	<0.01	<0.01	<0.02	**3.91**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.13**	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**4.24**	**0.06**	**0.04**	<0.02	**0.41**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.5**	<0.1	<0.1	<0.1	**0.1**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.55**	<0.02	<0.02	<0.02	**0.17**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.94**	<0.02	<0.02	<0.02	**1.15**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.13**	<0.02	<0.02	<0.02	**0.10**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.20**	<0.01	<0.01	<0.02	**0.03**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.09**	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.06	<0.05	<0.05	<0.06	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.06	<0.05	<0.05	<0.06	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.06	<0.05	<0.05	<0.06	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW067_221024	0861_MW012_221024	0861_QC192_221024	0861_MW026_221024	0861_MW037_221024
				Sampling date / time	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231825-012	EB2231825-013	EB2231825-014	EB2231825-015	EB2231825-016
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.06	<0.05	<0.05	<0.06	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.06	<0.05	<0.05	<0.06	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**11.2**	**0.06**	**0.04**	<0.02	**8.56**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**7.72**	**0.06**	**0.04**	<0.02	**4.32**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**10.6**	**0.06**	**0.04**	<0.02	**7.30**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**100**	**98.3**	**102**	**93.5**	**105**
13C8-PFOA	----	0.02	%		**104**	**106**	**100**	**107**	**105**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW032_221024	0861_MW050_221024	0861_MW005_221024	0861_QC358_221024	0861_QC463_221024
				Sampling date / time	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00
					EB2231825-017	EB2231825-018	EB2231825-019	EB2231825-020	EB2231825-021
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.69**	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.89**	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**9.52**	**0.07**	**0.04**	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**1.47**	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**27.9**	**0.10**	**0.03**	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.6**	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.72**	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**4.30**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.89**	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**2.23**	<0.02	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.06**	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.06	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.06	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.06	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW032_221024	0861_MW050_221024	0861_MW005_221024	0861_QC358_221024	0861_QC463_221024
				Sampling date / time	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00	24-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231825-017	EB2231825-018	EB2231825-019	EB2231825-020	EB2231825-021
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.06	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.06	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.08**	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**51.4**	**0.17**	**0.07**	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**37.4**	**0.17**	**0.07**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**47.9**	**0.17**	**0.07**	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.4**	**98.2**	**99.2**	**101**	**100**
13C8-PFOA	----	0.02	%		**107**	**107**	**106**	**103**	**105**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW025_221024	0861_QC193_221025	0861_MW036_221025	0861_MW049_221025	0861_MW048_221025
				Sampling date / time	24-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231825-022	EB2231825-025	EB2231825-026	EB2231825-027	EB2231825-028
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.25**	<0.02	<0.02	**1.49**	**0.86**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.20**	<0.02	<0.02	**1.17**	**1.01**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.38**	**0.04**	**0.04**	**5.68**	**7.46**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.06**	<0.02	<0.02	**0.22**	**0.32**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.06**	<0.01	<0.01	**10.2**	**13.4**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.3**	<0.1	<0.1	**0.6**	<0.5
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.38**	<0.02	<0.02	**0.61**	**0.24**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.64**	<0.02	<0.02	**2.55**	**1.37**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.15**	<0.02	<0.02	**0.28**	**0.14**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.17**	<0.01	<0.01	**0.40**	**0.26**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.06	<0.25
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.06	<0.25
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.06	<0.25

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW025_221024	0861_QC193_221025	0861_MW036_221025	0861_MW049_221025	0861_MW048_221025
				Sampling date / time	24-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231825-022	EB2231825-025	EB2231825-026	EB2231825-027	EB2231825-028
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.06	<0.25
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.06	<0.25
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.10
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.10
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.10
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.10
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.10
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**4.59**	**0.04**	**0.04**	**23.2**	**25.1**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**2.44**	**0.04**	**0.04**	**15.9**	**20.9**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**4.33**	**0.04**	**0.04**	**21.8**	**23.7**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.0**	**112**	**109**	**110**	**114**
13C8-PFOA	----	0.02	%		**107**	**105**	**107**	**99.7**	**104**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW047_221025	0861_MW020_221025	0861_MW309_221025	0861_MW046_221025	0861_MW041_221025
				Sampling date / time	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00
					EB2231825-029	EB2231825-030	EB2231825-031	EB2231825-032	EB2231825-033
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.45**	**0.16**	<0.02	**13.9**	**0.10**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.39**	**0.17**	<0.02	**16.5**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**10.3**	**1.12**	<0.02	**120**	**0.04**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.52**	**0.06**	<0.02	**12.6**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**6.38**	**2.13**	<0.02	**215**	**0.08**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.25	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.5**	**0.2**	<0.1	**17.8**	**0.2**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.60**	**0.36**	<0.02	**34.9**	**0.11**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**2.64**	**0.31**	<0.02	**74.8**	**0.06**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.24**	**0.09**	<0.02	**12.7**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.52**	**0.06**	<0.02	**31.6**	<0.02
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	**0.66**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.25	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.25	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.25	**0.02**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.25	**0.03**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.06	<0.05	<0.06	<0.63	**0.10**
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.25	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.06	<0.05	<0.06	<0.63	<0.06
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.06	<0.05	<0.06	<0.63	<0.06

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW047_221025	0861_MW020_221025	0861_MW309_221025	0861_MW046_221025	0861_MW041_221025
				Sampling date / time	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231825-029	EB2231825-030	EB2231825-031	EB2231825-032	EB2231825-033
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.06	<0.05	<0.06	<0.63	<0.06
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.06	<0.05	<0.06	<0.63	<0.06
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.25	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.25	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.25	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	**34.6**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	**1.74**	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.25	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**24.5**	**4.66**	<0.02	**587**	**0.74**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**16.7**	**3.25**	<0.02	**335**	**0.12**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**22.6**	**4.43**	<0.02	**557**	**0.59**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.8**	**116**	**99.7**	**102**	**96.8**
13C8-PFOA	----	0.02	%		**104**	**108**	**104**	**103**	**101**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW033_221025	0861_QC195_221025	0861_MW043_221025	0861_QC196_221025	0861_MW031_221025
				Sampling date / time	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00
					EB2231825-036	EB2231825-037	EB2231825-038	EB2231825-039	EB2231825-040
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.60**	**0.63**	**0.04**	**0.06**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.74**	**0.81**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**5.27**	**5.61**	**0.05**	**0.08**	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.27**	**0.30**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**17.1**	**17.5**	**0.05**	**0.06**	<0.02
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		**0.26**	**0.27**	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.7**	**0.7**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.85**	**0.89**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**2.58**	**2.65**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.37**	**0.38**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.88**	**0.93**	<0.02	<0.02	<0.02
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.03**	**0.04**	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.06
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		**0.16**	**0.19**	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.06
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.06

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW033_221025	0861_QC195_221025	0861_MW043_221025	0861_QC196_221025	0861_MW031_221025
				Sampling date / time	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231825-036	EB2231825-037	EB2231825-038	EB2231825-039	EB2231825-040
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.06
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.06
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**29.8**	**30.9**	**0.14**	**0.20**	<0.02
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**22.4**	**23.1**	**0.10**	**0.14**	<0.02
Sum of PFAS (WA DER List)	----	0.01	µg/L		**28.4**	**29.3**	**0.14**	**0.20**	<0.02
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**98.7**	**97.5**	**100**	**99.9**	**110**
13C8-PFOA	----	0.02	%		**102**	**104**	**101**	**105**	**103**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW030_221025	0861_QC359_221025	0861_QC464_221025	0861_SW008_221026	0861_MW028_221026
				Sampling date / time	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00	26-Oct-2022 00:00	26-Oct-2022 00:00
					EB2231825-041	EB2231825-042	EB2231825-043	EB2231825-045	EB2231825-046
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**5.49**	<0.02	<0.02	<0.05	**0.80**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**4.49**	<0.02	<0.02	<0.05	**0.85**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**11.4**	<0.01	<0.01	<0.05	**5.97**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.22**	<0.02	<0.02	<0.05	**0.64**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.16**	<0.01	<0.01	**0.07**	**10.3**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**1.5**	<0.1	<0.1	<0.2	**0.2**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**2.01**	<0.02	<0.02	<0.05	**0.23**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**13.2**	<0.02	<0.02	<0.05	**1.27**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**1.83**	<0.02	<0.02	<0.05	**0.21**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**1.19**	<0.01	<0.01	<0.05	**0.42**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.13	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.13	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.13	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW030_221025	0861_QC359_221025	0861_QC464_221025	0861_SW008_221026	0861_MW028_221026
				Sampling date / time	25-Oct-2022 00:00	25-Oct-2022 00:00	25-Oct-2022 00:00	26-Oct-2022 00:00	26-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231825-041	EB2231825-042	EB2231825-043	EB2231825-045	EB2231825-046
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.13	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.13	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**41.5**	<0.01	<0.01	**0.07**	**20.9**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**11.6**	<0.01	<0.01	**0.07**	**16.3**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**36.8**	<0.01	<0.01	**0.07**	**19.4**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**106**	**95.6**	**94.3**	**105**	**93.6**
13C8-PFOA	----	0.02	%		**104**	**97.9**	**98.1**	**98.4**	**98.5**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW029_221026	0861_MW044_221026	0861_QC197_221026	0861_MW023_221026	0861_MW006_221026
				Sampling date / time	26-Oct-2022 00:00	26-Oct-2022 00:00	26-Oct-2022 00:00	26-Oct-2022 00:00	26-Oct-2022 00:00
					EB2231825-047	EB2231825-048	EB2231825-049	EB2231825-050	EB2231825-051
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.78**	<0.25	<0.25	**0.09**	**2.05**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.97**	<0.25	<0.25	**0.06**	**1.80**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**6.14**	<0.25	<0.25	**0.37**	**12.9**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.56**	<0.25	<0.25	<0.02	**0.62**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**5.63**	<0.25	<0.25	**0.13**	**43.8**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.25	<0.25	<0.02	<0.05
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.1**	<1.2	<1.2	<0.1	**0.7**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.20**	<0.25	<0.25	<0.02	**1.94**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.11**	<0.25	<0.25	<0.02	**5.06**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.18**	<0.25	<0.25	<0.02	**0.74**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.29**	<0.25	<0.25	<0.01	**1.05**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.25	<0.25	<0.02	<0.05
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.25	<0.25	<0.02	<0.05
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.25	<0.25	<0.02	<0.05
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.25	<0.25	<0.02	<0.05
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.25	<0.25	<0.02	<0.05
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.63	<0.63	<0.05	<0.12
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.25	<0.25	<0.02	**0.22**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.63	<0.63	<0.05	<0.12
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.63	<0.63	<0.05	<0.12

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW029_221026	0861_MW044_221026	0861_QC197_221026	0861_MW023_221026	0861_MW006_221026
				Sampling date / time	26-Oct-2022 00:00	26-Oct-2022 00:00	26-Oct-2022 00:00	26-Oct-2022 00:00	26-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231825-047	EB2231825-048	EB2231825-049	EB2231825-050	EB2231825-051
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.63	<0.63	<0.05	<0.12
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.63	<0.63	<0.05	<0.12
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.25	<0.25	<0.02	<0.05
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.25	<0.25	<0.02	<0.05
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.25	<0.25	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.25	<0.25	<0.05	**0.42**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.25	<0.25	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.25	<0.25	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**16.0**	<0.25	<0.25	**0.65**	**71.3**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**11.8**	<0.25	<0.25	**0.50**	**56.7**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**14.4**	<0.25	<0.25	**0.59**	**68.7**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.7**	**99.6**	**96.5**	**97.0**	**105**
13C8-PFOA	----	0.02	%		**102**	**103**	**103**	**102**	**102**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW007_221026	0861_MW002_221026	0861_MW042_221026	0861_MW033_221026	0861_MW021_221026
				Sampling date / time	26-Oct-2022 00:00	26-Oct-2022 00:00	26-Oct-2022 00:00	26-Oct-2022 00:00	26-Oct-2022 00:00
					EB2231825-052	EB2231825-053	EB2231825-054	EB2231825-055	EB2231825-056
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.50**	<0.02	<0.02	<0.02	**1.91**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.70**	<0.02	<0.02	<0.02	**3.57**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**10.6**	<0.01	<0.02	<0.01	**37.4**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.50**	<0.02	<0.02	<0.02	**2.06**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**5.78**	<0.01	<0.13	**0.02**	**50.6**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.3**	<0.1	<0.1	<0.1	**0.3**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.53**	<0.02	<0.02	<0.02	**0.73**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**2.95**	<0.02	<0.02	<0.02	**4.45**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.42**	<0.02	<0.02	<0.02	**0.93**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.69**	<0.01	<0.02	<0.01	**3.07**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.06	<0.05	<0.12
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		**0.06**	<0.02	<0.02	<0.02	<0.05
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.06	<0.05	<0.12
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.06	<0.05	<0.12

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW007_221026	0861_MW002_221026	0861_MW042_221026	0861_MW033_221026	0861_MW021_221026
				Sampling date / time	26-Oct-2022 00:00	26-Oct-2022 00:00	26-Oct-2022 00:00	26-Oct-2022 00:00	26-Oct-2022 00:00
Compound	CAS Number	LOR	Unit		EB2231825-052	EB2231825-053	EB2231825-054	EB2231825-055	EB2231825-056
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.06	<0.05	<0.12
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.06	<0.05	<0.12
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**25.0**	<0.01	<0.02	**0.02**	**105**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**16.4**	<0.01	<0.02	**0.02**	**88.0**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**22.8**	<0.01	<0.02	**0.02**	**99.4**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**98.9**	**103**	**104**	**99.5**	**100**
13C8-PFOA	----	0.02	%		**103**	**102**	**102**	**100**	**103**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW024_221026	0861_QC360_221026	0861_QC465_221026	----	----
				Sampling date / time	26-Oct-2022 00:00	26-Oct-2022 00:00	26-Oct-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2231825-057	EB2231825-058	EB2231825-059	--------	--------
					Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.04**	<0.01	<0.01	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.02	<0.01	<0.01	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW024_221026	0861_QC360_221026	0861_QC465_221026	----	----
				Sampling date / time	26-Oct-2022 00:00	26-Oct-2022 00:00	26-Oct-2022 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2231825-057	EB2231825-058	EB2231825-059	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.04**	<0.01	<0.01	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.04**	<0.01	<0.01	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.04**	<0.01	<0.01	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.6**	**102**	**104**	----	----
13C8-PFOA	----	0.02	%		**98.4**	**103**	**99.8**	----	----

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2231825**	Page	: 1 of 20
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 27-Oct-2022
Order number	: 60612563 3.1	Date Analysis Commenced	: 30-Oct-2022
C-O-C number	: ----	Issue Date	: 24-Nov-2022
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 61		
No. of samples analysed	: 57		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4669685)									
EB2227913-027	Anonymous	EA055: Moisture Content	----	0.1	%	14.2	15.6	9.8	0% - 20%
EB2231825-044	0861_SD008_221026	EA055: Moisture Content	----	0.1	%	56.0	61.0	8.7	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4669684)									
EB2227912-022	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2231825-035	0861_QC194_221025	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0003	0.0006	61.2	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	0.0006	0.0013	77.9	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0063	# 0.0139	75.2	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0004	0.0013	104	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.133	# 0.228	52.8	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0063	# 0.0245	118	0% - 20%
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4669684)									
EB2227912-022	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4669684) - continued									
EB2227912-022	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2231825-035	0861_QC194_221025	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0006	0.0013	72.4	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0022	# 0.0049	77.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0003	0.0008	84.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0013	# 0.0031	82.2	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.0003	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.0003	45.9	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.0004	65.5	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.0005	88.3	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.0003	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4669684)									
EB2227912-022	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2231825-035	0861_QC194_221025	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	0.0008	# 0.0024	100	0% - 50%
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4669684)									
EB2227912-022	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2231825-035	0861_QC194_221025	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4679298)									
EB2231825-008	0861_SW079_221024	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.74	0.80	7.4	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	1.02	0.91	10.6	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.08	0.08	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.08	0.09	14.6	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.03	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EB2231825-010	0861_SW080_221024	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.76	0.69	9.3	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	1.22	1.29	5.4	0% - 50%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.10	<0.10	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4679307)									
EB2231825-036	0861_SW033_221025	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	5.27	5.47	3.7	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	17.1	15.7	8.9	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.60	0.60	0.0	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.74	0.78	5.7	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.27	0.28	0.0	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	0.26	0.31	16.0	0% - 50%
EB2231825-048	0861_MW044_221026	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.25	<0.25	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4679307) - continued									
EB2231825-048	0861_MW044_221026	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.25	<0.25	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4679420)									
EB2232287-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.05	0.04	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.02	0.03	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EB2232100-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.16	0.15	0.0	0% - 50%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.21	0.23	5.7	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4679298)									
EB2231825-008	0861_SW079_221024	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.05	0.05	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.16	0.19	13.5	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EB2231825-010	0861_SW080_221024	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4679307)									
EB2231825-036	0861_SW033_221025	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.88	0.90	2.5	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.85	0.81	4.5	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	2.58	2.51	2.6	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.37	0.33	10.8	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.7	0.7	0.0	No Limit
EB2231825-048	0861_MW044_221026	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.63	<0.63	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<1.2	<1.2	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4679420)									
EB2232287-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.03	0.02	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EB2232100-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.17	0.17	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.14	0.14	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.09	0.08	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4679420) - continued									
EB2232100-001	Anonymous	EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4679298)									
EB2231825-008	0861_SW079_221024	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.06	<0.06	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.06	<0.06	0.0	No Limit
EB2231825-010	0861_SW080_221024	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.25	<0.25	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4679307)									
EB2231825-036	0861_SW033_221025	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	0.16	0.16	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4679307) - continued									
EB2231825-036	0861_SW033_221025	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2231825-048	0861_MW044_221026	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.63	<0.63	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.63	<0.63	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.63	<0.63	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.63	<0.63	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4679420)									
EB2232287-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2232100-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4679420) - continued									
EB2232100-001	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4679298)									
EB2231825-008	0861_SW079_221024	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2231825-010	0861_SW080_221024	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.10	<0.10	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.10	<0.10	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4679307)									
EB2231825-036	0861_SW033_221025	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2231825-048	0861_MW044_221026	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.25	<0.25	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4679420)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4679420) - continued									
EB2232287-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2232100-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4679298)									
EB2231825-008	0861_SW079_221024	EP231X: Sum of PFAS	----	0.01	µg/L	2.19	2.15	1.8	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	1.76	1.71	2.9	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	2.08	2.06	1.0	0% - 20%
EB2231825-010	0861_SW080_221024	EP231X: Sum of PFAS	----	0.01	µg/L	1.98	1.98	0.0	0% - 50%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	1.98	1.98	0.0	0% - 50%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	1.98	1.98	0.0	0% - 50%
EP231P: PFAS Sums (QC Lot: 4679307)									
EB2231825-036	0861_SW033_221025	EP231X: Sum of PFAS	----	0.01	µg/L	29.8	28.6	4.2	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	22.4	21.2	5.5	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	28.4	27.0	4.8	0% - 20%
EB2231825-048	0861_MW044_221026	EP231X: Sum of PFAS	----	0.01	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.25	<0.25	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4679420)									
EB2232287-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.21	0.20	4.9	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.07	0.06	15.4	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.21	0.20	4.9	0% - 20%
EB2232100-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.81	0.81	0.0	0% - 20%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231P: PFAS Sums (QC Lot: 4679420) - continued									
EB2232100-001	Anonymous	EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.37	0.38	2.7	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.81	0.81	0.0	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4669684)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	108	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	110	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	107	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	105	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	102	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	101	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4669684)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	100	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	93.2	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	109	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	107	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	101	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	109	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.2	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	109	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4669684)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	107	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	108	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	106	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	110	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	110	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4669684)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	107	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	112	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	85.8	65.0	137

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4669684) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	89.6	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4679298)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	94.9	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	91.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	92.1	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	95.8	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	85.6	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	85.3	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4679307)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	98.3	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	108	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	117	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	106	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	102	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	107	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4679420)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	99.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	103	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	116	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	107	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	105	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	102	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4679298)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	85.6	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	80.4	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	96.8	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	85.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.8	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	93.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	83.0	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	86.2	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	88.8	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	91.8	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	86.3	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4679307)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4679307) - continued								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	114	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	94.2	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	119	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	98.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	111	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	104	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	99.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	102	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	108	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	104	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4679420)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	97.6	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	88.0	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	104	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	98.2	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	101	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	99.8	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	92.8	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	96.0	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	94.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	101	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	99.3	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4679298)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	92.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	110	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	85.8	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	88.4	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	88.7	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	94.8	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	80.4	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4679307)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	96.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	105	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	98.5	60.5	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4679307) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	102	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	101	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	110	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	90.0	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4679420)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	103	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	105	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	110	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	104	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	107	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	110	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	97.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4679298)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	98.0	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	92.1	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	78.8	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	72.4	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4679307)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	115	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	95.2	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	108	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	96.0	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4679420)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	116	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	118	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	108	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	89.2	64.2	133
EP231P: PFAS Sums (QCLot: 4679298)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231P: PFAS Sums (QCLot: 4679298) - continued								
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 4679307)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 4679420)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4669684)							
EB2227913-027	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	109	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	106	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	116	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	113	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	118	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	112	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4669684)							
EB2227913-027	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	101	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	101	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	124	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	116	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	114	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	99.6	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	100	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	108	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	103	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	104	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	105	69.0	133

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4669684)							
EB2227913-027	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	104	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	106	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	116	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	117	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	106	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	103	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	113	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4669684)							
EB2227913-027	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	121	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	116	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	103	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	87.5	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4679298)							
EB2231825-004	0861_SW064_221024	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	106	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	90.4	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	99.2	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	108	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	84.5	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	94.0	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4679307)							
EB2231825-038	0861_MW043_221025	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	110	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	104	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	103	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	106	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	101	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	98.8	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4679420)							
EB2232287-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	107	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	96.6	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	121	68.0	131

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4679420) - continued							
EB2232287-002	Anonymous	EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	118	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	97.6	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	106	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4679298)							
EB2231825-004	0861_SW064_221024	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	103	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	85.8	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	98.8	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	94.4	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	99.8	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	95.2	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	89.2	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	95.2	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	95.0	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	97.8	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	99.4	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4679307)							
EB2231825-038	0861_MW043_221025	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	115	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	90.0	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	126	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	104	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	109	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	95.0	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	99.2	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	99.8	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	100	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	102	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	102	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4679420)							
EB2232287-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	105	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	89.9	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	119	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	110	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	106	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	107	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	106	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	100	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	99.2	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	101	65.0	144

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4679420) - continued							
EB2232287-002	Anonymous	EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	106	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4679298)							
EB2231825-004	0861_SW064_221024	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	102	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	105	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	97.7	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	105	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	99.2	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	111	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	86.0	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4679307)							
EB2231825-038	0861_MW043_221025	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	94.8	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	130	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	91.0	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	94.9	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	96.5	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	106	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	98.6	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4679420)							
EB2232287-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	114	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	113	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	108	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	120	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	111	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	113	65.0	136

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4679420) - continued							
EB2232287-002	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	90.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4679298)							
EB2231825-004	0861_SW064_221024	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	108	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	98.0	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	81.0	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	71.6	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4679307)							
EB2231825-038	0861_MW043_221025	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	108	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	98.0	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	91.2	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	74.9	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4679420)							
EB2232287-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	115	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	119	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	109	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	90.1	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2231825**	Page	: 1 of 10
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: +[redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 27-Oct-2022
Site	: ----	Issue Date	: 24-Nov-2022
Sampler	: [redacted]	No. of samples received	: 61
Order number	: 60612563 3.1	No. of samples analysed	: 57

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Duplicate outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2231825--035	0861_QC194_221025	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	75.2 %	0% - 20%	**RPD exceeds LOR based limits**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2231825--035	0861_QC194_221025	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	52.8 %	0% - 20%	**RPD exceeds LOR based limits**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2231825--035	0861_QC194_221025	**Perfluorodecane sulfonic acid (PFDS)**	335-77-3	118 %	0% - 20%	**RPD exceeds LOR based limits**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2231825--035	0861_QC194_221025	**Perfluorohexanoic acid (PFHxA)**	307-24-4	77.0 %	0% - 20%	**RPD exceeds LOR based limits**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2231825--035	0861_QC194_221025	**Perfluorooctanoic acid (PFOA)**	335-67-1	82.2 %	0% - 50%	**RPD exceeds LOR based limits**
EP231C: Perfluoroalkyl Sulfonamides	EB2231825--035	0861_QC194_221025	**Perfluorooctane sulfonamide (FOSA)**	754-91-6	100 %	0% - 50%	**RPD exceeds LOR based limits**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) 0861_SD053_221024, 0861_SD064_221024, 0861_SD038_221024, 0861_SD079_221024, 0861_SD080_221024, 0861_SD067_221024	**24-Oct-2022**	**----**	----	----	**30-Oct-2022**	07-Nov-2022	✓
HDPE Soil Jar (EA055) 0861_SD033_221025, 0861_QC194_221025	**25-Oct-2022**	**----**	----	----	**30-Oct-2022**	08-Nov-2022	✓
HDPE Soil Jar (EA055) 0861_SD008_221026	**26-Oct-2022**	**----**	----	----	**30-Oct-2022**	09-Nov-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD053_221024, 0861_SD064_221024, 0861_SD038_221024, 0861_SD079_221024, 0861_SD080_221024, 0861_SD067_221024	**24-Oct-2022**	**01-Nov-2022**	22-Apr-2023	✓	**03-Nov-2022**	11-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD033_221025, 0861_QC194_221025	**25-Oct-2022**	**01-Nov-2022**	23-Apr-2023	✓	**03-Nov-2022**	11-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD008_221026	**26-Oct-2022**	**01-Nov-2022**	24-Apr-2023	✓	**03-Nov-2022**	11-Dec-2022	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0861_SD053_221024, 0861_SD064_221024, 0861_SD038_221024, 0861_SD079_221024, 0861_SD080_221024, 0861_SD067_221024	**24-Oct-2022**	**01-Nov-2022**	22-Apr-2023	✓	**03-Nov-2022**	11-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD033_221025, 0861_QC194_221025	**25-Oct-2022**	**01-Nov-2022**	23-Apr-2023	✓	**03-Nov-2022**	11-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD008_221026	**26-Oct-2022**	**01-Nov-2022**	24-Apr-2023	✓	**03-Nov-2022**	11-Dec-2022	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0861_SD053_221024, 0861_SD064_221024, 0861_SD038_221024, 0861_SD079_221024, 0861_SD080_221024, 0861_SD067_221024	**24-Oct-2022**	**01-Nov-2022**	22-Apr-2023	✓	**03-Nov-2022**	11-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD033_221025, 0861_QC194_221025	**25-Oct-2022**	**01-Nov-2022**	23-Apr-2023	✓	**03-Nov-2022**	11-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD008_221026	**26-Oct-2022**	**01-Nov-2022**	24-Apr-2023	✓	**03-Nov-2022**	11-Dec-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD053_221024, 0861_SD064_221024, 0861_SD038_221024, 0861_SD079_221024, 0861_SD080_221024, 0861_SD067_221024	**24-Oct-2022**	**01-Nov-2022**	22-Apr-2023	✓	**03-Nov-2022**	11-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD033_221025, 0861_QC194_221025	**25-Oct-2022**	**01-Nov-2022**	23-Apr-2023	✓	**03-Nov-2022**	11-Dec-2022	✓
HDPE Soil Jar (EP231X) 0861_SD008_221026	**26-Oct-2022**	**01-Nov-2022**	24-Apr-2023	✓	**03-Nov-2022**	11-Dec-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X)							
0861_SD053_221024, 0861_SD064_221024, 0861_SD038_221024, 0861_SD079_221024, 0861_SD080_221024, 0861_SD067_221024	**24-Oct-2022**	**01-Nov-2022**	22-Apr-2023	✓	**03-Nov-2022**	11-Dec-2022	✓
HDPE Soil Jar (EP231X)							
0861_SD033_221025, 0861_QC194_221025	**25-Oct-2022**	**01-Nov-2022**	23-Apr-2023	✓	**03-Nov-2022**	11-Dec-2022	✓
HDPE Soil Jar (EP231X)							
0861_SD008_221026	**26-Oct-2022**	**01-Nov-2022**	24-Apr-2023	✓	**03-Nov-2022**	11-Dec-2022	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_SW053_221024, 0861_SW064_221024, 0861_SW038_221024, 0861_SW079_221024, 0861_SW080_221024, 0861_SW067_221024, 0861_MW012_221024, 0861_QC192_221024, 0861_MW026_221024, 0861_MW037_221024, 0861_MW032_221024, 0861_MW050_221024, 0861_MW005_221024, 0861_QC358_221024, 0861_QC463_221024, 0861_MW025_221024	**24-Oct-2022**	**07-Nov-2022**	22-Apr-2023	✓	**07-Nov-2022**	22-Apr-2023	✓
HDPE (no PTFE) (EP231X)							
0861_QC193_221025, 0861_MW036_221025, 0861_MW049_221025, 0861_MW048_221025, 0861_MW047_221025, 0861_MW020_221025, 0861_MW309_221025, 0861_MW046_221025, 0861_MW041_221025, 0861_SW033_221025, 0861_QC195_221025, 0861_MW043_221025, 0861_QC196_221025, 0861_MW031_221025, 0861_MW030_221025, 0861_QC359_221025, 0861_QC464_221025	**25-Oct-2022**	**07-Nov-2022**	23-Apr-2023	✓	**07-Nov-2022**	23-Apr-2023	✓
HDPE (no PTFE) (EP231X)							
0861_SW008_221026, 0861_MW028_221026, 0861_MW029_221026, 0861_MW044_221026, 0861_QC197_221026, 0861_MW023_221026, 0861_MW006_221026, 0861_MW007_221026, 0861_MW002_221026, 0861_MW042_221026, 0861_MW033_221026, 0861_MW021_221026, 0861_MW024_221026, 0861_QC360_221026, 0861_QC465_221026	**26-Oct-2022**	**07-Nov-2022**	24-Apr-2023	✓	**07-Nov-2022**	24-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0861_SW053_221024, 0861_SW064_221024, 0861_SW038_221024, 0861_SW079_221024, 0861_SW080_221024, 0861_SW067_221024, 0861_MW012_221024, 0861_QC192_221024, 0861_MW026_221024, 0861_MW037_221024, 0861_MW032_221024, 0861_MW050_221024, 0861_MW005_221024, 0861_QC358_221024, 0861_QC463_221024, 0861_MW025_221024	**24-Oct-2022**	**07-Nov-2022**	22-Apr-2023	✓	**07-Nov-2022**	22-Apr-2023	✓
HDPE (no PTFE) (EP231X)							
0861_QC193_221025, 0861_MW036_221025, 0861_MW049_221025, 0861_MW048_221025, 0861_MW047_221025, 0861_MW020_221025, 0861_MW309_221025, 0861_MW046_221025, 0861_MW041_221025, 0861_SW033_221025, 0861_QC195_221025, 0861_MW043_221025, 0861_QC196_221025, 0861_MW031_221025, 0861_MW030_221025, 0861_QC359_221025, 0861_QC464_221025	**25-Oct-2022**	**07-Nov-2022**	23-Apr-2023	✓	**07-Nov-2022**	23-Apr-2023	✓
HDPE (no PTFE) (EP231X)							
0861_SW008_221026, 0861_MW028_221026, 0861_MW029_221026, 0861_MW044_221026, 0861_QC197_221026, 0861_MW023_221026, 0861_MW006_221026, 0861_MW007_221026, 0861_MW002_221026, 0861_MW042_221026, 0861_MW033_221026, 0861_MW021_221026, 0861_MW024_221026, 0861_QC360_221026, 0861_QC465_221026	**26-Oct-2022**	**07-Nov-2022**	24-Apr-2023	✓	**07-Nov-2022**	24-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0861_SW053_221024, 0861_SW064_221024, 0861_SW038_221024, 0861_SW079_221024, 0861_SW080_221024, 0861_SW067_221024, 0861_MW012_221024, 0861_QC192_221024, 0861_MW026_221024, 0861_MW037_221024, 0861_MW032_221024, 0861_MW050_221024, 0861_MW005_221024, 0861_QC358_221024, 0861_QC463_221024, 0861_MW025_221024	**24-Oct-2022**	**07-Nov-2022**	22-Apr-2023	✓	**07-Nov-2022**	22-Apr-2023	✓
HDPE (no PTFE) (EP231X)							
0861_QC193_221025, 0861_MW036_221025, 0861_MW049_221025, 0861_MW048_221025, 0861_MW047_221025, 0861_MW020_221025, 0861_MW309_221025, 0861_MW046_221025, 0861_MW041_221025, 0861_SW033_221025, 0861_QC195_221025, 0861_MW043_221025, 0861_QC196_221025, 0861_MW031_221025, 0861_MW030_221025, 0861_QC359_221025, 0861_QC464_221025	**25-Oct-2022**	**07-Nov-2022**	23-Apr-2023	✓	**07-Nov-2022**	23-Apr-2023	✓
HDPE (no PTFE) (EP231X)							
0861_SW008_221026, 0861_MW028_221026, 0861_MW029_221026, 0861_MW044_221026, 0861_QC197_221026, 0861_MW023_221026, 0861_MW006_221026, 0861_MW007_221026, 0861_MW002_221026, 0861_MW042_221026, 0861_MW033_221026, 0861_MW021_221026, 0861_MW024_221026, 0861_QC360_221026, 0861_QC465_221026	**26-Oct-2022**	**07-Nov-2022**	24-Apr-2023	✓	**07-Nov-2022**	24-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_SW053_221024, 0861_SW064_221024, 0861_SW038_221024, 0861_SW079_221024, 0861_SW080_221024, 0861_SW067_221024, 0861_MW012_221024, 0861_QC192_221024, 0861_MW026_221024, 0861_MW037_221024, 0861_MW032_221024, 0861_MW050_221024, 0861_MW005_221024, 0861_QC358_221024, 0861_QC463_221024, 0861_MW025_221024	**24-Oct-2022**	**07-Nov-2022**	22-Apr-2023	✓	**07-Nov-2022**	22-Apr-2023	✓
HDPE (no PTFE) (EP231X)							
0861_QC193_221025, 0861_MW036_221025, 0861_MW049_221025, 0861_MW048_221025, 0861_MW047_221025, 0861_MW020_221025, 0861_MW309_221025, 0861_MW046_221025, 0861_MW041_221025, 0861_SW033_221025, 0861_QC195_221025, 0861_MW043_221025, 0861_QC196_221025, 0861_MW031_221025, 0861_MW030_221025, 0861_QC359_221025, 0861_QC464_221025	**25-Oct-2022**	**07-Nov-2022**	23-Apr-2023	✓	**07-Nov-2022**	23-Apr-2023	✓
HDPE (no PTFE) (EP231X)							
0861_SW008_221026, 0861_MW028_221026, 0861_MW029_221026, 0861_MW044_221026, 0861_QC197_221026, 0861_MW023_221026, 0861_MW006_221026, 0861_MW007_221026, 0861_MW002_221026, 0861_MW042_221026, 0861_MW033_221026, 0861_MW021_221026, 0861_MW024_221026, 0861_QC360_221026, 0861_QC465_221026	**26-Oct-2022**	**07-Nov-2022**	24-Apr-2023	✓	**07-Nov-2022**	24-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0861_SW053_221024, 0861_SW064_221024, 0861_SW038_221024, 0861_SW079_221024, 0861_SW080_221024, 0861_SW067_221024, 0861_MW012_221024, 0861_QC192_221024, 0861_MW026_221024, 0861_MW037_221024, 0861_MW032_221024, 0861_MW050_221024, 0861_MW005_221024, 0861_QC358_221024, 0861_QC463_221024, 0861_MW025_221024	**24-Oct-2022**	**07-Nov-2022**	22-Apr-2023	✓	**07-Nov-2022**	22-Apr-2023	✓
HDPE (no PTFE) (EP231X)							
0861_QC193_221025, 0861_MW036_221025, 0861_MW049_221025, 0861_MW048_221025, 0861_MW047_221025, 0861_MW020_221025, 0861_MW309_221025, 0861_MW046_221025, 0861_MW041_221025, 0861_SW033_221025, 0861_QC195_221025, 0861_MW043_221025, 0861_QC196_221025, 0861_MW031_221025, 0861_MW030_221025, 0861_QC359_221025, 0861_QC464_221025	**25-Oct-2022**	**07-Nov-2022**	23-Apr-2023	✓	**07-Nov-2022**	23-Apr-2023	✓
HDPE (no PTFE) (EP231X)							
0861_SW008_221026, 0861_MW028_221026, 0861_MW029_221026, 0861_MW044_221026, 0861_QC197_221026, 0861_MW023_221026, 0861_MW006_221026, 0861_MW007_221026, 0861_MW002_221026, 0861_MW042_221026, 0861_MW033_221026, 0861_MW021_221026, 0861_MW024_221026, 0861_QC360_221026, 0861_QC465_221026	**26-Oct-2022**	**07-Nov-2022**	24-Apr-2023	✓	**07-Nov-2022**	24-Apr-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	6	56	**10.71**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	56	**5.36**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	56	**5.36**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	56	**5.36**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2231850**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0861_PFASOMP	Page	: 1 of 2
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 27-Oct-2022 09:35	Issue Date	: 31-Oct-2022
Client Requested Due Date	: 04-Nov-2022	Scheduled Reporting Date	: **04-Nov-2022**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 5.5°C, 3.8°C - Ice present
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***SRN Reissued 31/10/2022: To acknowledge request for updated Sample ID's.***
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2231850-001	26-Oct-2022 00:00	0861_MW057S_221026	✓
EB2231850-002	26-Oct-2022 00:00	0861_MW057I_221026	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ENMRG (ENMRG)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2231850**	Page	: 1 of 7
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 27-Oct-2022 09:35
Order number	: 60612563 3.1	Date Analysis Commenced	: 28-Oct-2022
C-O-C number	: ----	Issue Date	: 08-Nov-2022 09:36
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X PFAS: High laboratory control standard recoveries have been deemed acceptable as associated sample analyte results are less than the limit of reporting.
- EP231X PFAS: Whole bottle extraction was not possible for sample '0861_MW057S_221026' (EB2231850-001). Sample required dilution prior to extraction due to matrix interference (sediment). LOR values have been adjusted accordingly.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.
- EP231X-INJ: The direct injection LCMSMS method may be used where the sample matrix is not suitable for Solid Phase Extraction (e.g. significant particulate load) or where only a single sample container is received.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW057S_221026	0861_MW057I_221026	----	----	----
				Sampling date / time	26-Oct-2022 00:00	26-Oct-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2231850-001	EB2231850-002	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		----	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		----	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		----	<0.01	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		----	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		----	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		----	<0.02	----	----	----
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.37**	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.31**	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.54**	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.07**	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**1.03**	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.10	µg/L		----	<0.10	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		----	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		----	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		----	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		----	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		----	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		----	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		----	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		----	<0.02	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW057S_221026	0861_MW057I_221026	----	----	----
				Sampling date / time	26-Oct-2022 00:00	26-Oct-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2231850-001	EB2231850-002	--------	--------	--------
					Result	Result	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		----	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		----	<0.05	----	----	----
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.1**	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.06**	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.33**	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.05**	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.11**	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.06	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		----	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		----	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		----	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		----	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		----	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		----	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		----	<0.02	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW057S_221026	0861_MW057I_221026	----	----	----
				Sampling date / time	26-Oct-2022 00:00	26-Oct-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2231850-001	EB2231850-002	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.06	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.06	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.06	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.06	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		----	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		----	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		----	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		----	<0.05	----	----	----
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		----	<0.01	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	0861_MW057S_221026	0861_MW057I_221026	----	----	----
			Sampling date / time	26-Oct-2022 00:00	26-Oct-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EB2231850-001	EB2231850-002	--------	--------	--------
				Result	Result	----	----	----
EP231P: PFAS Sums - Continued								
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**----**	<0.01	**----**	**----**	**----**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**----**	<0.01	**----**	**----**	**----**
Sum of PFAS	----	0.01	µg/L	**3.97**	**----**	**----**	**----**	**----**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	**2.57**	**----**	**----**	**----**	**----**
Sum of PFAS (WA DER List)	----	0.01	µg/L	**3.59**	**----**	**----**	**----**	**----**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	**104**	**----**	**----**	**----**	**----**
13C4-PFOS	----	0.02	%	**----**	**104**	**----**	**----**	**----**
13C8-PFOA	----	0.02	%	**98.2**	**----**	**----**	**----**	**----**
13C8-PFOA	----	0.02	%	**----**	**112**	**----**	**----**	**----**

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2231850**	Page	: 1 of 8
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 27-Oct-2022
Order number	: 60612563 3.1	Date Analysis Commenced	: 28-Oct-2022
C-O-C number	: ----	Issue Date	: 08-Nov-2022
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	2IC Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4671817)									
EB2231197-009	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.78	0.73	5.7	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	1.00	1.02	1.8	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.08	0.08	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.10	0.09	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4681607)									
EB2231850-002	0861_MW057I_221026	EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4671817)									
EB2231197-009	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.05	0.04	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.20	0.19	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.02	0.02	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4671817) - continued									
EB2231197-009	Anonymous	EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4681607)									
EB2231850-002	0861_MW057I_221026	EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	<0.10	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4671817)									
EB2231197-009	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4681607)									
EB2231850-002	0861_MW057I_221026	EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4681607) - continued									
EB2231850-002	0861_MW057I_221026	EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4671817)									
EB2231197-009	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4681607)									
EB2231850-002	0861_MW057I_221026	EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4671817)									
EB2231197-009	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	2.31	2.25	2.6	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	1.78	1.75	1.7	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	2.17	2.12	2.3	0% - 20%
EP231P: PFAS Sums (QC Lot: 4681607)									
EB2231850-002	0861_MW057I_221026	EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4671817)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	128	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	127	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	124	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	131	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	133	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	123	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4681607)								
EP231X-INJ: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.444 µg/L	123	72.0	130
EP231X-INJ: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.47 µg/L	118	71.0	127
EP231X-INJ: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.475 µg/L	125	68.0	131
EP231X-INJ: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.477 µg/L	130	69.0	134
EP231X-INJ: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.4646 µg/L	103	65.0	140
EP231X-INJ: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	97.6	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4671817)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	122	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	119	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	128	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	118	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	133	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	121	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	127	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	117	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	126	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	128	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	126	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4681607)								
EP231X-INJ: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.10	2.5 µg/L	113	73.0	129
EP231X-INJ: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	96.6	72.0	129
EP231X-INJ: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	123	72.0	129
EP231X-INJ: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	112	72.0	130
EP231X-INJ: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	118	71.0	133
EP231X-INJ: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	104	69.0	130
EP231X-INJ: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	103	71.0	129
EP231X-INJ: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	116	69.0	133

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4681607) - continued								
EP231X-INJ: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	107	72.0	134
EP231X-INJ: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	115	65.0	144
EP231X-INJ: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	118	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4671817)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	128	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	131	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	# 147	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	118	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	137	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	136	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	# 141	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4681607)								
EP231X-INJ: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	128	67.0	137
EP231X-INJ: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	110	68.0	141
EP231X-INJ: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	120	62.1	136
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	116	65.2	135
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	124	63.2	135
EP231X-INJ: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	128	65.0	136
EP231X-INJ: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	94.4	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4671817)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	140	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	121	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	121	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	122	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4681607)								
EP231X-INJ: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.469 µg/L	112	63.0	143
EP231X-INJ: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.476 µg/L	117	64.0	140
EP231X-INJ: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.48 µg/L	108	67.0	138
EP231X-INJ: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.483 µg/L	103	62.2	139
EP231P: PFAS Sums (QCLot: 4671817)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231P: PFAS Sums (QCLot: 4671817) - continued								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 4681607)								
EP231X-INJ: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X-INJ: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4671817)							
EB2231197-009	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	103	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	95.8	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	89.8	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	94.8	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	97.8	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	95.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4671817)							
EB2231197-009	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	115	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	95.4	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	115	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	102	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	104	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	91.6	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	92.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	102	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	93.0	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	95.6	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	103	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4671817)							
EB2231197-009	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	100	59.0	135

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4671817) - continued							
EB2231197-009	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	106	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	91.0	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	98.0	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	100	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	103	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	93.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4671817)							
EB2231197-009	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	113	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	99.9	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	95.0	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	71.8	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2231850**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP	Date Samples Received	: 27-Oct-2022
Site	: ----	Issue Date	: 08-Nov-2022
Sampler	: [redacted]	No. of samples received	: 2
Order number	: 60612563 3.1	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP231C: Perfluoroalkyl Sulfonamides	QC-4671817-002	----	**N-Ethyl perfluorooctane sulfonamide (EtFOSA)**	4151-50-2	147 %	60.5-138%	**Recovery greater than upper control limit**
EP231C: Perfluoroalkyl Sulfonamides	QC-4671817-002	----	**N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)**	2991-50-6	141 %	61.0-135%	**Recovery greater than upper control limit**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	17	5.88	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)	*Sample Date*	*Extraction / Preparation* Date extracted	Due for extraction	Evaluation	*Analysis* Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X-INJ)							
0861_MW057S_221026, 0861_MW057I_221026	**26-Oct-2022**	**04-Nov-2022**	24-Apr-2023	✓	**04-Nov-2022**	24-Apr-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X-INJ)							
0861_MW057S_221026, 0861_MW057I_221026	**26-Oct-2022**	**04-Nov-2022**	24-Apr-2023	✓	**04-Nov-2022**	24-Apr-2023	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X-INJ)							
0861_MW057S_221026, 0861_MW057I_221026	**26-Oct-2022**	**04-Nov-2022**	24-Apr-2023	✓	**04-Nov-2022**	24-Apr-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X-INJ)							
0861_MW057S_221026, 0861_MW057I_221026	**26-Oct-2022**	**04-Nov-2022**	24-Apr-2023	✓	**04-Nov-2022**	24-Apr-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X-INJ)							
0861_MW057S_221026, 0861_MW057I_221026	**26-Oct-2022**	**04-Nov-2022**	24-Apr-2023	✓	**04-Nov-2022**	24-Apr-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	**5.88**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	1	**100.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X-INJ	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with mobile phase solvent. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.

Preparation Methods	Method	Matrix	Method Descriptions
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2233627**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Page	: 1 of 3
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 09-Nov-2022 17:31	Issue Date	: 11-Nov-2022
Client Requested Due Date	: 21-Nov-2022	Scheduled Reporting Date	: **21-Nov-2022**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: ----	Temperature	: 6.1°C - Ice present
Receipt Detail	: HARD ESKY	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2233627-001	09-Nov-2022 00:00	0861_MW054D_221109	✓
EB2233627-002	09-Nov-2022 00:00	0861_MW054S_221109	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- *AU Certificate of Analysis - NATA (COA)	Email	derp.labreports@esdat.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	derp.labreports@esdat.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	derp.labreports@esdat.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	derp.labreports@esdat.com.au
- Chain of Custody (CoC) (COC)	Email	derp.labreports@esdat.com.au
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	derp.labreports@esdat.com.au
- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2233627**	Page	: 1 of 5
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 09-Nov-2022 17:31
Order number	: 60612563 3.1	Date Analysis Commenced	: 11-Nov-2022
C-O-C number	: ----	Issue Date	: 18-Nov-2022 13:54
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X PFAS: Sample '0861_MW054D_221109' required dilution prior to extraction due to matrix interferences. LOR values have been adjusted accordingly.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW054D_221109	0861_MW054S_221109	----	----	----
				Sampling date / time	09-Nov-2022 00:00	09-Nov-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2233627-001	EB2233627-002	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.03**	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.03**	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.02	**0.20**	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.02	**0.18**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.03**	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.02	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.06	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.06	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.06	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW054D_221109	0861_MW054S_221109	----	----	----
				Sampling date / time	09-Nov-2022 00:00	09-Nov-2022 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2233627-001	EB2233627-002	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.06	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.06	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.02	**0.47**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.02	**0.38**	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.02	**0.44**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	**97.4**	----	----	----
13C8-PFOA	----	0.02	%		**99.7**	**97.0**	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2233627**	Page	: 1 of 6
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 09-Nov-2022
Order number	: 60612563 3.1	Date Analysis Commenced	: 11-Nov-2022
C-O-C number	: ----	Issue Date	: 18-Nov-2022
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4705869)									
EB2233631-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4705869)									
EB2233631-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4705869)									
EB2233631-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4705869) - continued									
EB2233631-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4705869)									
EB2233631-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4705869)									
EB2233631-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4705869)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	92.0	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	96.3	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	90.6	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	94.1	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	93.3	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	92.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4705869)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	81.1	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	83.0	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	95.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	97.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	83.8	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	80.8	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	87.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	80.8	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	81.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	81.2	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	88.5	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4705869)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	87.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	80.0	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	77.5	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	77.1	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	77.4	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	88.6	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	93.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4705869)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	77.9	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	80.3	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	96.4	67.0	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4705869) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	86.1	64.2	133
EP231P: PFAS Sums (QCLot: 4705869)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4705869)							
EB2233631-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	91.3	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	84.2	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	81.4	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	79.4	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	71.4	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	70.3	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4705869)							
EB2233631-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	76.3	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	86.0	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	89.6	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	87.2	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	80.2	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	80.6	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	83.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	83.0	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	84.6	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	75.8	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	82.8	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4705869)							
EB2233631-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	88.2	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	83.7	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	82.9	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4705869) - continued							
EB2233631-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	79.7	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	79.0	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	77.0	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	76.9	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4705869)							
EB2233631-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	80.1	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	79.3	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	86.0	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	83.0	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2233627**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: [redacted]	Date Samples Received	: 09-Nov-2022
Site	: ----	Issue Date	: 18-Nov-2022
Sampler	: [redacted]	No. of samples received	: 2
Order number	: 60612563 3.1	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0861_MW054D_221109,	0861_MW054S_221109	**09-Nov-2022**	**17-Nov-2022**	08-May-2023	✓	**17-Nov-2022**	08-May-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0861_MW054D_221109,	0861_MW054S_221109	**09-Nov-2022**	**17-Nov-2022**	08-May-2023	✓	**17-Nov-2022**	08-May-2023	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0861_MW054D_221109,	0861_MW054S_221109	**09-Nov-2022**	**17-Nov-2022**	08-May-2023	✓	**17-Nov-2022**	08-May-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0861_MW054D_221109,	0861_MW054S_221109	**09-Nov-2022**	**17-Nov-2022**	08-May-2023	✓	**17-Nov-2022**	08-May-2023	✓
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0861_MW054D_221109,	0861_MW054S_221109	**09-Nov-2022**	**17-Nov-2022**	08-May-2023	✓	**17-Nov-2022**	08-May-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2233631**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Page	: 1 of 3
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: [redacted]		

Dates

Date Samples Received	: 09-Nov-2022 17:31	Issue Date	: 14-Nov-2022
Client Requested Due Date	: 21-Nov-2022	Scheduled Reporting Date	: **21-Nov-2022**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 6.1°C - Ice present
Receipt Detail	: HARD ESKY	No. of samples received / analysed	: 6 / 6

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please be advised two sample sets were received labelled "0861_QC" and no sample sets were received labelled "0861_QC198 and 0861_QC298". ALS has allocated "0861_QC198 and 0861_QC298" from the "0861_QC" samples at random. If you would like to discuss this further please contact Client Services at ALSEnviro.Brisbane@alsglobal.com.**
- ***SRN Reissued 14/11/2022 Please be advised that the project number 60612563 3.1 has been removed from the project name field as per email request from** [redacted]
- **14/11/22: SRN has been resent to acknowledge the changes in sample ID's as requested by client. For any further information regarding these adjustments please contact client services at ALSEnviro.Brisbane@alsglobal.com.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- **Sample "0861_QC298" has been forwarded to NMI, as requested. Please note that this will incur a freight forwarding fee.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2233631-001	09-Nov-2022 00:00	0861_MW034_221109	✓
EB2233631-002	09-Nov-2022 00:00	0861_MW022_221109	✓
EB2233631-003	09-Nov-2022 00:00	0861_QC198_221109	✓
EB2233631-004	09-Nov-2022 00:00	0861_MW035_221109	✓
EB2233631-005	09-Nov-2022 00:00	0861_QC361_221109	✓
EB2233631-006	09-Nov-2022 00:00	0861_QC466_221109	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- *AU Certificate of Analysis - NATA (COA)	Email	derp.labreports@esdat.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	derp.labreports@esdat.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	derp.labreports@esdat.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	derp.labreports@esdat.com.au
- Chain of Custody (CoC) (COC)	Email	derp.labreports@esdat.com.au
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	derp.labreports@esdat.com.au
- EDI Format - ESDAT (ESDAT)	Email	derp.labreports@esdat.com.au

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB2233631**	Page	: 1 of 7
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	[redacted]	Telephone	: +[redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 09-Nov-2022 17:31
Order number	: 60612563 3.1	Date Analysis Commenced	: 11-Nov-2022
C-O-C number	: ----	Issue Date	: 18-Nov-2022 14:09
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 6		
No. of samples analysed	: 6		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	0861_MW034_221109	0861_MW022_221109	0861_QC198_221109	0861_MW035_221109	0861_QC361_221109
				Sampling date / time	09-Nov-2022 00:00	09-Nov-2022 00:00	09-Nov-2022 00:00	09-Nov-2022 00:00	09-Nov-2022 00:00
					EB2233631-001	EB2233631-002	EB2233631-003	EB2233631-004	EB2233631-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.18**	**0.18**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.21**	**0.22**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	**1.42**	**1.53**	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**0.12**	**0.11**	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.04**	**0.04**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.23**	**0.21**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.02**	**0.02**	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.04**	**0.03**	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW034_221109	0861_MW022_221109	0861_QC198_221109	0861_MW035_221109	0861_QC361_221109
				Sampling date / time	09-Nov-2022 00:00	09-Nov-2022 00:00	09-Nov-2022 00:00	09-Nov-2022 00:00	09-Nov-2022 00:00
Compound	CAS Number	LOR	Unit		EB2233631-001	EB2233631-002	EB2233631-003	EB2233631-004	EB2233631-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**2.26**	**2.34**	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**1.54**	**1.64**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**2.05**	**2.12**	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**94.5**	**99.0**	**96.9**	**92.1**	**99.7**
13C8-PFOA	----	0.02	%		**98.0**	**99.6**	**95.1**	**98.9**	**95.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC466_221109	----	----	----	----
				Sampling date / time	09-Nov-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2233631-006	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC466_221109	----	----	----	----
				Sampling date / time	09-Nov-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2233631-006	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**87.0**	----	----	----	----
13C8-PFOA	----	0.02	%		**97.7**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB2233631**	Page	: 1 of 6
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 09-Nov-2022
Order number	: 60612563 3.1	Date Analysis Commenced	: 11-Nov-2022
C-O-C number	: ----	Issue Date	: 18-Nov-2022
Sampler	: [redacted]		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 6		
No. of samples analysed	: 6		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Assistant Laboratory Manager	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4705869)									
EB2233631-001	0861_MW034_221109	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4705869)									
EB2233631-001	0861_MW034_221109	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4705869)									
EB2233631-001	0861_MW034_221109	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4705869) - continued									
EB2233631-001	0861_MW034_221109	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4705869)									
EB2233631-001	0861_MW034_221109	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4705869)									
EB2233631-001	0861_MW034_221109	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4705869)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	92.0	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	96.3	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	90.6	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	94.1	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	93.3	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	92.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4705869)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	81.1	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	83.0	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	95.0	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	97.6	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	83.8	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	80.8	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	87.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	80.8	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	81.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	81.2	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	88.5	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4705869)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	87.2	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	80.0	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	77.5	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	77.1	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	77.4	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	88.6	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	93.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4705869)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	77.9	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	80.3	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	96.4	67.0	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4705869) - continued								
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	86.1	64.2	133
EP231P: PFAS Sums (QCLot: 4705869)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4705869)							
EB2233631-001	0861_MW034_221109	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	91.3	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	84.2	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	81.4	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	79.4	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	71.4	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	70.3	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4705869)							
EB2233631-001	0861_MW034_221109	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	76.3	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	86.0	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	89.6	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	87.2	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	80.2	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	80.6	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	83.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	83.0	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	84.6	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	75.8	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	82.8	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4705869)							
EB2233631-001	0861_MW034_221109	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	88.2	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	83.7	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	82.9	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4705869) - continued							
EB2233631-001	0861_MW034_221109	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	79.7	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	79.0	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	77.0	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	76.9	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4705869)							
EB2233631-001	0861_MW034_221109	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	80.1	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	79.3	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	86.0	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	83.0	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2233631**	Page	: 1 of 4
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Date Samples Received	: 09-Nov-2022
Site	: ----	Issue Date	: 18-Nov-2022
Sampler	: [redacted]	No. of samples received	: 6
Order number	: 60612563 3.1	No. of samples analysed	: 6

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0861_MW034_221109,	0861_MW022_221109,	**09-Nov-2022**	**17-Nov-2022**	08-May-2023	✓	**17-Nov-2022**	08-May-2023	✓
0861_QC198_221109,	0861_MW035_221109,							
0861_QC361_221109,	0861_QC466_221109							
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0861_MW034_221109,	0861_MW022_221109,	**09-Nov-2022**	**17-Nov-2022**	08-May-2023	✓	**17-Nov-2022**	08-May-2023	✓
0861_QC198_221109,	0861_MW035_221109,							
0861_QC361_221109,	0861_QC466_221109							
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0861_MW034_221109,	0861_MW022_221109,	**09-Nov-2022**	**17-Nov-2022**	08-May-2023	✓	**17-Nov-2022**	08-May-2023	✓
0861_QC198_221109,	0861_MW035_221109,							
0861_QC361_221109,	0861_QC466_221109							
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0861_MW034_221109,	0861_MW022_221109,	**09-Nov-2022**	**17-Nov-2022**	08-May-2023	✓	**17-Nov-2022**	08-May-2023	✓
0861_QC198_221109,	0861_MW035_221109,							
0861_QC361_221109,	0861_QC466_221109							
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0861_MW034_221109,	0861_MW022_221109,	**09-Nov-2022**	**17-Nov-2022**	08-May-2023	✓	**17-Nov-2022**	08-May-2023	✓
0861_QC198_221109,	0861_MW035_221109,							
0861_QC361_221109,	0861_QC466_221109							

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: [redacted]

Email: [redacted]

Telephone:

Fax:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: [redacted]

Address: [redacted]

Email: [redacted]

Telephone: [redacted]

Fax:

SAMPLE DETAILS

NMI Job Name: AECO06/221025/1

Total No. of Samples: 9

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N22/020947	1-NOV-2022	0861_QC288_221020	SEDIMENT 20/10/22
N22/020948	1-NOV-2022	0861_QC289_221020	WATER 20/10/22
N22/020949	1-NOV-2022	0861_QC290_221021	SEDIMENT 21/10/22
N22/020950	1-NOV-2022	0861_QC291_221021	WATER 21/10/22
N22/020951	1-NOV-2022	0861_QC282_221018	WATER 18/10/22
N22/020952	1-NOV-2022	0861_QC283_221018	SEDIMENT 18/10/22
N22/020953	1-NOV-2022	0861_QC285_221018	WATER 18/10/22
N22/020954	1-NOV-2022	0861_QC286_221019	SEDIMENT 19/10/22
N22/020955	1-NOV-2022	0861_QC460_221019	WATER 19/10/22

SAMPLE RECEIVED CONDITION

Date samples received:	25-OCT-2022
Sample received in good order:	Yes
NMI Quotation no. provided:	
Client purchase order number:	60612563_3_1
Temperature of samples:	Chilled
Comments:	ALL OK
Mode of Delivery:	Courier

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

REPORT OF ANALYSIS

Client	: [redacted]	**Job No.**	: AECO06/221025/1
		Quote No.	: QT-02018
		Order No.	: 60612563_3_1
		Date Received	: 25-OCT-2022
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N22/020947	0861_QC288_221020	SEDIMENT 20/10/22
N22/020949	0861_QC290_221021	SEDIMENT 21/10/22
N22/020952	0861_QC283_221018	SEDIMENT 18/10/22
N22/020954	0861_QC286_221019	SEDIMENT 19/10/22

Lab Reg No.		N22/020947	N22/020949	N22/020952	N22/020954	
Date Sampled		20-OCT-2022	21-OCT-2022	18-OCT-2022	19-OCT-2022	
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	mg/kg	<0.005	0.0041	<0.002	<0.002	NR70
PFPeA (2706-90-3)	mg/kg	<0.005	0.0085	<0.002	<0.002	NR70
PFHxA (307-24-4)	mg/kg	<0.005	0.031	<0.001	<0.001	NR70
PFHpA (375-85-9)	mg/kg	<0.005	0.017	<0.001	<0.001	NR70
PFOA (335-67-1)	mg/kg	<0.005	0.012	<0.001	<0.001	NR70
PFNA (375-95-1)	mg/kg	<0.005	0.0010	<0.001	<0.001	NR70
PFDA (335-76-2)	mg/kg	<0.005	<0.001	<0.001	<0.001	NR70
PFUdA (2058-94-8)	mg/kg	<0.005	<0.002	<0.002	<0.002	NR70
PFDoA (307-55-1)	mg/kg	<0.005	<0.002	<0.002	<0.002	NR70
PFTrDA (72629-94-8)	mg/kg	<0.005	<0.002	<0.002	<0.002	NR70
PFTeDA (376-06-7)	mg/kg	<0.005	<0.002	<0.002	<0.002	NR70
PFHxDA (67905-19-5)	mg/kg	<0.005	<0.002	<0.002	<0.002	NR70
PFODA (16517-11-6)	mg/kg	<0.005	<0.005	<0.005	<0.005	NR70
FOUEA (70887-84-2)	mg/kg	<0.005	<0.001	<0.001	<0.001	NR70
PFBS (375-73-5)	mg/kg	<0.005	0.0067	<0.001	<0.001	NR70
PFPeS (2706-91-4)	mg/kg	0.0097	0.017	<0.001	<0.001	NR70
PFHxS (355-46-4)	mg/kg	0.10	0.34	0.0045	<0.001	NR70
PFHpS (375-92-8)	mg/kg	0.0078	0.0016	<0.001	<0.001	NR70
PFOS (1763-23-1)	mg/kg	0.57	0.21	0.12	0.067	NR70
PFNS (68259-12-1)	mg/kg	<0.005	<0.001	<0.001	<0.001	NR70
PFDS (335-77-3)	mg/kg	<0.005	<0.001	<0.001	<0.001	NR70
PFOSA (754-91-6)	mg/kg	<0.005	<0.001	<0.001	<0.001	NR70
N-MeFOSA (31506-32-8)	mg/kg	<0.005	<0.002	<0.002	<0.002	NR70
N-EtFOSA (4151-50-2)	mg/kg	<0.005	<0.002	<0.002	<0.002	NR70
N-MeFOSAA (2355-31-9)	mg/kg	<0.005	<0.002	<0.002	<0.002	NR70
N-EtFOSAA(2991-50-6)	mg/kg	<0.005	<0.002	<0.002	<0.002	NR70
N-MeFOSE (24448-09-7)	mg/kg	<0.005	<0.005	<0.005	<0.005	NR70

REPORT OF ANALYSIS

Lab Reg No.		N22/020947	N22/020949	N22/020952	N22/020954	
Date Sampled		20-OCT-2022	21-OCT-2022	18-OCT-2022	19-OCT-2022	
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
N-EtFOSE (1691-99-2)	mg/kg	<0.005	<0.005	<0.005	<0.005	NR70
4:2 FTS (757124-72-4)	mg/kg	<0.005	<0.001	<0.001	<0.001	NR70
6:2 FTS (27619-97-2)	mg/kg	<0.005	<0.001	<0.001	<0.001	NR70
8:2 FTS (39108-34-4)	mg/kg	<0.005	<0.001	<0.001	<0.001	NR70
10:2 FTS (120226-60-0)	mg/kg	<0.005	<0.002	<0.002	<0.002	NR70
8:2 diPAP (678-41-1)	mg/kg	<0.005	<0.002	<0.002	<0.002	NR70
PFBA (Surrogate Recovery)	%	149	152	145	139	NR70
PFPeA (Surrogate Recovery)	%	154	158	145	143	NR70
PFHxA (Surrogate Recovery)	%	140	150	278	137	NR70
PFHpA (Surrogate Recovery)	%	136	144	235	136	NR70
PFOA (Surrogate Recovery)	%	149	155	153	150	NR70
PFNA (Surrogate Recovery)	%	132	156	157	141	NR70
PFDA (Surrogate Recovery)	%	160	167	153	158	NR70
PFUdA (Surrogate Recovery)	%	154	149	86	130	NR70
PFDoA (Surrogate Recovery)	%	166	159	88	131	NR70
PFTeDA (Surrogate Recovery)	%	160	158	168	150	NR70
PFHxDA (Surrogate Recovery)	%	167	152	57	107	NR70
FOUEA (Surrogate Recovery)	%	146	168	97	140	NR70
PFBS (Surrogate Recovery)	%	157	164	393	156	NR70
PFHxS (Surrogate Recovery)	%	138	129	314	131	NR70
PFOS (Surrogate Recovery)	%	154	150	149	147	NR70
PFOSA (Surrogate Recovery)	%	134	144	109	99	NR70
N-MeFOSA (Surrogate Recovery)	%	119	128	128	114	NR70
N-EtFOSA (Surrogate Recovery)	%	107	131	136	114	NR70
N-MeFOSAA (Surrogate Recovery)	%	184	195	78	102	NR70
N-EtFOSAA (Surrogate Recovery)	%	227	220	101	187	NR70
N-MeFOSE (Surrogate Recovery)	%	112	124	142	109	NR70
N-EtFOSE (Surrogate Recovery)	%	79	109	142	103	NR70
4:2 FTS (Surrogate Recovery)	%	247	206	123	174	NR70
6:2 FTS (Surrogate Recovery)	%	261	231	124	227	NR70
8:2 FTS (Surrogate Recovery)	%	264	284	127	331	NR70
8:2 diPAP (Surrogate Recovery)	%	186	136	102	103	NR70
Dates						
Date extracted		31-OCT-2022	31-OCT-2022	31-OCT-2022	31-OCT-2022	
Date analysed		31-OCT-2022	31-OCT-2022	31-OCT-2022	31-OCT-2022	

N22/020947
to
N22/020954

REPORT OF ANALYSIS

PFOS and PFHxS are quantified using a combined branched and linear standard, linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
High PFAS surrogate recoveries accepted - results corrected for recovery.
LOR values for Sample N22/020947 were raised due to the low solid contentô in the sample.

[redacted]

Organics - NSW
Accreditation No. 198

01-NOV-2022

Lab Reg No.	Units	N22/020947	N22/020949	N22/020952	N22/020954	Method
Date Sampled		20-OCT-2022	21-OCT-2022	18-OCT-2022	19-OCT-2022	
Trace Elements						
Total Solids	%	7.0	30.7	46.1	39.4	NT2_49
Dates						
Date extracted		28-OCT-2022	28-OCT-2022	28-OCT-2022	28-OCT-2022	
Date analysed		31-OCT-2022	31-OCT-2022	31-OCT-2022	31-OCT-2022	

[redacted]

Inorganics - NSW
Accreditation No. 198

01-NOV-2022

All results are expressed on a dry weight basis.

REPORT OF ANALYSIS

Client	: [redacted]	**Job No.**	: AECO06/221025/1
		Quote No.	: QT-02018
		Order No.	: 60612563_3_1
		Date Received	: 25-OCT-2022
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N22/020948	0861_QC289_221020	WATER 20/10/22
N22/020950	0861_QC291_221021	WATER 21/10/22
N22/020951	0861_QC282_221018	WATER 18/10/22
N22/020953	0861_QC285_221018	WATER 18/10/22

Lab Reg No.			N22/020948	N22/020950	N22/020951	N22/020953	
Date Sampled			20-OCT-2022	21-OCT-2022	18-OCT-2022	18-OCT-2022	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	0.10	0.093	<0.05	<0.05	NR70
PFPeA (2706-90-3)		ug/L	0.033	0.21	<0.02	<0.02	NR70
PFHxA (307-24-4)		ug/L	0.11	0.45	0.061	<0.01	NR70
PFHpA (375-85-9)		ug/L	0.014	0.096	<0.01	<0.01	NR70
PFOA (335-67-1)		ug/L	0.032	0.11	0.017	<0.01	NR70
PFNA (375-95-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDA (335-76-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFPeS (2706-91-4)		ug/L	0.061	0.19	0.037	<0.01	NR70
PFHxS (355-46-4)		ug/L	0.52	1.6	0.31	<0.01	NR70
PFHpS (375-92-8)		ug/L	0.020	0.040	<0.01	<0.01	NR70
PFOS (1763-23-1)		ug/L	0.67	1.4	0.65	<0.02	NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFBS (375-73-5)		ug/L	0.062	0.22	0.051	<0.01	NR70
PFOSA (754-91-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70

REPORT OF ANALYSIS

Lab Reg No.			N22/020948	N22/020950	N22/020951	N22/020953	
Date Sampled			20-OCT-2022	21-OCT-2022	18-OCT-2022	18-OCT-2022	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)		ug/L	<0.01	0.036	<0.01	<0.01	NR70
8:2 FTS (39108-34-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)		%	134	137	142	136	NR70
PFPeA (Surrogate Recovery)		%	156	158	163	147	NR70
PFHxA (Surrogate Recovery)		%	135	136	139	135	NR70
PFHpA (Surrogate Recovery)		%	140	138	143	134	NR70
PFOA (Surrogate Recovery)		%	139	141	141	135	NR70
PFNA (Surrogate Recovery)		%	132	134	137	136	NR70
PFDA (Surrogate Recovery)		%	134	142	138	140	NR70
PFUdA (Surrogate Recovery)		%	119	128	127	126	NR70
PFDoA (Surrogate Recovery)		%	112	113	107	97	NR70
PFTeDA (Surrogate Recovery)		%	99	108	90	88	NR70
PFHxDA (Surrogate Recovery)		%	109	122	117	116	NR70
FOUEA (Surrogate Recovery)		%	100	103	101	91	NR70
PFBS (Surrogate Recovery)		%	131	129	134	130	NR70
PFHxS (Surrogate Recovery)		%	132	135	134	129	NR70
PFOS (Surrogate Recovery)		%	133	140	138	133	NR70
PFOSA (Surrogate Recovery)		%	110	121	115	106	NR70
N-MeFOSA (Surrogate Recovery)		%	86	94	87	77	NR70
N-EtFOSA (Surrogate Recovery)		%	81	87	78	69	NR70
N-MeFOSAA (Surrogate Recovery)		%	108	110	96	86	NR70
N-EtFOSAA (Surrogate Recovery)		%	101	97	84	76	NR70
N-MeFOSE (Surrogate Recovery)		%	91	98	90	76	NR70
N-EtFOSE (Surrogate Recovery)		%	81	86	76	65	NR70
4:2 FTS (Surrogate Recovery)		%	153	161	159	135	NR70
6:2 FTS (Surrogate Recovery)		%	121	121	117	109	NR70
8:2 FTS (Surrogate Recovery)		%	116	125	118	112	NR70
8:2 diPAP (Surrogate Recovery)		%	93	106	98	87	NR70
Dates							
Date extracted			27-OCT-2022	27-OCT-2022	27-OCT-2022	27-OCT-2022	
Date analysed			27-OCT-2022	27-OCT-2022	27-OCT-2022	27-OCT-2022	

N22/020948
to
N22/020955

REPORT OF ANALYSIS

PFOS and PFHxS are quantified using a combined branched and linear standard, linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
High PFAS surrogate recoveries accepted - results corrected for recovery.

[redacted]

Organics - NSW
Accreditation No. 198

01-NOV-2022

REPORT OF ANALYSIS

Client	: [redacted]	**Job No.**	: AECO06/221025/1
		Quote No.	: QT-02018
		Order No.	: 60612563_3_1
		Date Received	: 25-OCT-2022
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N22/020955	0861_QC460_221019	WATER 19/10/22

Lab Reg No.			N22/020955				
Date Sampled			19-OCT-2022				
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	<0.05				NR70
PFPeA (2706-90-3)		ug/L	<0.02				NR70
PFHxA (307-24-4)		ug/L	<0.01				NR70
PFHpA (375-85-9)		ug/L	<0.01				NR70
PFOA (335-67-1)		ug/L	<0.01				NR70
PFNA (375-95-1)		ug/L	<0.01				NR70
PFDA (335-76-2)		ug/L	<0.01				NR70
PFUdA (2058-94-8)		ug/L	<0.01				NR70
PFDoA (307-55-1)		ug/L	<0.01				NR70
PFTrDA (72629-94-8)		ug/L	<0.02				NR70
PFTeDA (376-06-7)		ug/L	<0.02				NR70
PFHxDA (67905-19-5)		ug/L	<0.02				NR70
PFODA (16517-11-6)		ug/L	<0.05				NR70
FOUEA (70887-84-2)		ug/L	<0.01				NR70
PFDS (335-77-3)		ug/L	<0.01				NR70
PFPeS (2706-91-4)		ug/L	<0.01				NR70
PFHxS (355-46-4)		ug/L	<0.01				NR70
PFHpS (375-92-8)		ug/L	<0.01				NR70
PFOS (1763-23-1)		ug/L	<0.02				NR70
PFNS (68259-12-1)		ug/L	<0.01				NR70
PFBS (375-73-5)		ug/L	<0.01				NR70
PFOSA (754-91-6)		ug/L	<0.01				NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02				NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02				NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01				NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01				NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05				NR70
N-EtFOSE (1691-99-2)		ug/L	<0.05				NR70
4:2 FTS (757124-72-4)		ug/L	<0.01				NR70
6:2 FTS (27619-97-2)		ug/L	<0.01				NR70

REPORT OF ANALYSIS

Lab Reg No.			N22/020955				
Date Sampled			19-OCT-2022				
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
8:2 FTS (39108-34-4)		ug/L	<0.01				NR70
10:2 FTS (120226-60-0)		ug/L	<0.01				NR70
8:2 diPAP (678-41-1)		ug/L	<0.02				NR70
PFBA (Surrogate Recovery)		%	140				NR70
PFPeA (Surrogate Recovery)		%	138				NR70
PFHxA (Surrogate Recovery)		%	142				NR70
PFHpA (Surrogate Recovery)		%	148				NR70
PFOA (Surrogate Recovery)		%	143				NR70
PFNA (Surrogate Recovery)		%	145				NR70
PFDA (Surrogate Recovery)		%	137				NR70
PFUdA (Surrogate Recovery)		%	128				NR70
PFDoA (Surrogate Recovery)		%	117				NR70
PFTeDA (Surrogate Recovery)		%	122				NR70
PFHxDA (Surrogate Recovery)		%	145				NR70
FOUEA (Surrogate Recovery)		%	101				NR70
PFBS (Surrogate Recovery)		%	128				NR70
PFHxS (Surrogate Recovery)		%	133				NR70
PFOS (Surrogate Recovery)		%	138				NR70
PFOSA (Surrogate Recovery)		%	122				NR70
N-MeFOSA (Surrogate Recovery)		%	107				NR70
N-EtFOSA (Surrogate Recovery)		%	104				NR70
N-MeFOSAA (Surrogate Recovery)		%	128				NR70
N-EtFOSAA (Surrogate Recovery)		%	117				NR70
N-MeFOSE (Surrogate Recovery)		%	110				NR70
N-EtFOSE (Surrogate Recovery)		%	100				NR70
4:2 FTS (Surrogate Recovery)		%	112				NR70
6:2 FTS (Surrogate Recovery)		%	117				NR70
8:2 FTS (Surrogate Recovery)		%	117				NR70
8:2 diPAP (Surrogate Recovery)		%	99				NR70
Dates							
Date extracted			27-OCT-2022				
Date analysed			27-OCT-2022				

[redacted]
Organics - NSW
Accreditation No. 198

01-NOV-2022

REPORT OF ANALYSIS

This Report supersedes reports: *RN1370744*

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
Chemical Accreditation 198: 105 Delhi Road, North Ryde, NSW, 2113

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/221025/1 **Sample Matrix:** Solid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		mg/kg	mg/kg	mg/kg	mg/kg	%	%	%
				N22/020954				
PFBA (375-22-4)	NR70	0.002	<0.002	<0.002	<0.002	-	101	NA
PFPeA (2706-90-3)	NR70	0.002	<0.002	<0.002	<0.002	-	91	NA
PFHxA (307-24-4)	NR70	0.001	<0.001	<0.001	<0.001	-	95	NA
PFHpA (375-85-9)	NR70	0.001	<0.001	<0.001	<0.001	-	95	NA
PFOA (335-67-1)	NR70	0.001	<0.001	<0.001	<0.001	-	102	NA
PFNA (375-95-1)	NR70	0.001	<0.001	<0.001	<0.001	-	91	NA
PFDA (335-76-2)	NR70	0.001	<0.001	<0.001	<0.001	-	97	NA
PFUdA (2058-94-8)	NR70	0.002	<0.002	<0.002	<0.002	-	93	NA
PFDoA (307-55-1)	NR70	0.002	<0.002	<0.002	<0.002	-	102	NA
PFTrDA (72629-94-8)	NR70	0.002	<0.002	<0.002	<0.002	-	115	NA
PFTeDA (376-06-7)	NR70	0.002	<0.002	<0.002	<0.002	-	99	NA
PFHxDA (67905-19-5)	NR70	0.002	<0.002	<0.002	<0.002	-	101	NA
PFODA (16517-11-6)	NR70	0.005	<0.005	<0.005	<0.005	-	86	NA
FOUEA (70887-84-2)	NR70	0.001	<0.001	<0.001	<0.001	-	106	NA
PFBS (375-73-5)	NR70	0.001	<0.001	<0.001	<0.001	-	96	NA
PFPeS (2706-91-4)	NR70	0.001	<0.001	<0.001	<0.001	-	99	NA
PFHxS (355-46-4)	NR70	0.001	<0.001	<0.001	0.001	-	93	NA
PFHpS (375-92-8)	NR70	0.001	<0.001	<0.001	<0.001	-	105	NA
PFOS (1763-23-1)	NR70	0.002	<0.002	0.067	0.078	15	99	NA
PFNS (68259-12-1)	NR70	0.001	<0.001	<0.001	<0.001	-	96	NA
PFDS (335-77-3)	NR70	0.001	<0.001	<0.001	<0.001	-	90	NA
PFOSA (754-91-6)	NR70	0.001	<0.001	<0.001	<0.001	-	94	NA
N-MeFOSA (31506-32-8)	NR70	0.002	<0.002	<0.002	<0.002	-	94	NA
N-EtFOSA (4151-50-2)	NR70	0.002	<0.002	<0.002	<0.002	-	93	NA
N-MeFOSAA (2355-31-9)	NR70	0.002	<0.002	<0.002	<0.002	-	91	NA
N-EtFOSAA(2991-50-6)	NR70	0.002	<0.002	<0.002	<0.002	-	103	NA
N-MeFOSE (24448-09-7)	NR70	0.005	<0.005	<0.005	<0.005	-	94	NA
N-EtFOSE (1691-99-2)	NR70	0.005	<0.005	<0.005	<0.005	-	104	NA
4:2 FTS (757124-72-4)	NR70	0.001	<0.001	<0.001	<0.001	-	102	NA
6:2 FTS (27619-97-2)	NR70	0.001	<0.001	<0.001	<0.001	-	93	NA
8:2 FTS (39108-34-4)	NR70	0.001	<0.001	<0.001	<0.001	-	84	NA
10:2 FTS (120226-60-0)	NR70	0.002	<0.002	<0.002	<0.002	-	92	NA
8:2 diPAP (678-41-1)	NR70	0.002	<0.002	<0.002	<0.002	-	108	NA

Results expressed in percentage (%) or mg/kg wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Organics Manager, NMI-North Ryde

Date: **1/11/2022**

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/221025/1 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	104	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	100	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	96	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	95	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	108	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	107	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	101	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	110	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	99	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	109	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	113	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	104	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	105	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	106	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	101	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	98	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	103	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	101	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	104	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	104	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	100	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	111	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	103	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	102	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	99	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	95	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	121	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Organics Manager, NMI-North Ryde

Date: **1/11/2022**

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: [redacted]

Email: [redacted]

Telephone:

Fax:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: [redacted]

Address: [redacted]

Email: [redacted]

Telephone: [redacted]

Fax:

SAMPLE DETAILS

NMI Job Name: AECO06/221102

Total No. of Samples: 6

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N22/021565	9-NOV-2022	0861_QC292_221024	WATER 24.10.22
N22/021566	9-NOV-2022	0861_QC293_221025	WATER 25.10.22
N22/021567	9-NOV-2022	0861_QC294_221025	SOIL 25.10.22
N22/021568	9-NOV-2022	0861_QC295_221025	WATER 25.10.22
N22/021569	9-NOV-2022	0861_QC296_221025	WATER 25.10.22
N22/021570	9-NOV-2022	0861_QC297_221026	WATER 2610.22

SAMPLE RECEIVED CONDITION

Date samples received:	2-NOV-2022
Sample received in good order:	Yes
NMI Quotation no. provided:	60612563_3_1
Client purchase order number:	60612563_3_1
Temperature of samples:	Chilled
Comments:	
Mode of Delivery:	Courier

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

REPORT OF ANALYSIS

Client	: [redacted]	**Job No.**	: AECO06/221102
		Quote No.	: QT-02018
		Order No.	: 60612563_3_1
		Date Received	: 02-NOV-2022
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	[redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N22/021567	0861_QC294_221025	SOIL 25.10.22

Lab Reg No.		N22/021567				
Date Sampled		25-OCT-2022				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	mg/kg	<0.002				NR70
PFPeA (2706-90-3)	mg/kg	<0.002				NR70
PFHxA (307-24-4)	mg/kg	0.0032				NR70
PFHpA (375-85-9)	mg/kg	<0.001				NR70
PFOA (335-67-1)	mg/kg	0.0026				NR70
PFNA (375-95-1)	mg/kg	<0.001				NR70
PFDA (335-76-2)	mg/kg	<0.001				NR70
PFUdA (2058-94-8)	mg/kg	<0.002				NR70
PFDoA (307-55-1)	mg/kg	<0.002				NR70
PFTrDA (72629-94-8)	mg/kg	<0.002				NR70
PFTeDA (376-06-7)	mg/kg	<0.002				NR70
PFHxDA (67905-19-5)	mg/kg	<0.002				NR70
PFODA (16517-11-6)	mg/kg	<0.005				NR70
FOUEA (70887-84-2)	mg/kg	<0.001				NR70
PFBS (375-73-5)	mg/kg	<0.001				NR70
PFPeS (2706-91-4)	mg/kg	<0.001				NR70
PFHxS (355-46-4)	mg/kg	0.013				NR70
PFHpS (375-92-8)	mg/kg	<0.001				NR70
PFOS (1763-23-1)	mg/kg	0.21				NR70
PFNS (68259-12-1)	mg/kg	0.0015				NR70
PFDS (335-77-3)	mg/kg	0.0060				NR70
PFOSA (754-91-6)	mg/kg	<0.001				NR70
N-MeFOSA (31506-32-8)	mg/kg	<0.002				NR70
N-EtFOSA (4151-50-2)	mg/kg	<0.002				NR70
N-MeFOSAA (2355-31-9)	mg/kg	<0.002				NR70
N-EtFOSAA(2991-50-6)	mg/kg	<0.002				NR70
N-MeFOSE (24448-09-7)	mg/kg	<0.005				NR70
N-EtFOSE (1691-99-2)	mg/kg	<0.005				NR70
4:2 FTS (757124-72-4)	mg/kg	<0.001				NR70
6:2 FTS (27619-97-2)	mg/kg	<0.001				NR70

REPORT OF ANALYSIS

Lab Reg No.		N22/021567				
Date Sampled		25-OCT-2022				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
8:2 FTS (39108-34-4)	mg/kg	<0.001				NR70
10:2 FTS (120226-60-0)	mg/kg	<0.002				NR70
8:2 diPAP (678-41-1)	mg/kg	<0.002				NR70
PFBA (Surrogate Recovery)	%	150				NR70
PFPeA (Surrogate Recovery)	%	151				NR70
PFHxA (Surrogate Recovery)	%	141				NR70
PFHpA (Surrogate Recovery)	%	144				NR70
PFOA (Surrogate Recovery)	%	148				NR70
PFNA (Surrogate Recovery)	%	144				NR70
PFDA (Surrogate Recovery)	%	151				NR70
PFUdA (Surrogate Recovery)	%	150				NR70
PFDoA (Surrogate Recovery)	%	151				NR70
PFTeDA (Surrogate Recovery)	%	171				NR70
PFHxDA (Surrogate Recovery)	%	165				NR70
FOUEA (Surrogate Recovery)	%	112				NR70
PFBS (Surrogate Recovery)	%	130				NR70
PFHxS (Surrogate Recovery)	%	142				NR70
PFOS (Surrogate Recovery)	%	144				NR70
PFOSA (Surrogate Recovery)	%	146				NR70
N-MeFOSA (Surrogate Recovery)	%	138				NR70
N-EtFOSA (Surrogate Recovery)	%	140				NR70
N-MeFOSAA (Surrogate Recovery)	%	141				NR70
N-EtFOSAA (Surrogate Recovery)	%	144				NR70
N-MeFOSE (Surrogate Recovery)	%	128				NR70
N-EtFOSE (Surrogate Recovery)	%	129				NR70
4:2 FTS (Surrogate Recovery)	%	115				NR70
6:2 FTS (Surrogate Recovery)	%	112				NR70
8:2 FTS (Surrogate Recovery)	%	120				NR70
8:2 diPAP (Surrogate Recovery)	%	154				NR70
Dates						
Date extracted		7-NOV-2022				
Date analysed		7-NOV-2022				

N22/021567
PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô

REPORT OF ANALYSIS

High PFAS surrogate recoveries accepted - results corrected for recovery.

[redacted]

Organics - NSW
Accreditation No. 198

09-NOV-2022

Lab Reg No.		**N22/021567**				
Date Sampled		**25-OCT-2022**				
	Units					**Method**
Trace Elements						
Total Solids	%	62.1				NT2_49

[redacted]

09-NOV-2022

All results are expressed on a dry weight basis.

REPORT OF ANALYSIS

Report No. RN1371573

Client	[redacted]	**Job No.**	: AECO06/221102
		Quote No.	: QT-02018
		Order No.	: 60612563_3_1
		Date Received	: 02-NOV-2022
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N22/021565	0861_QC292_221024	WATER 24.10.22
N22/021566	0861_QC293_221025	WATER 25.10.22
N22/021568	0861_QC295_221025	WATER 25.10.22
N22/021569	0861_QC296_221025	WATER 25.10.22

Lab Reg No.			N22/021565	N22/021566	N22/021568	N22/021569	
Date Sampled			24-OCT-2022	25-OCT-2022	25-OCT-2022	25-OCT-2022	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	<0.05	<0.05	0.47	<0.05	NR70
PFPeA (2706-90-3)		ug/L	<0.02	<0.02	0.63	<0.02	NR70
PFHxA (307-24-4)		ug/L	<0.01	<0.01	1.4	0.020	NR70
PFHpA (375-85-9)		ug/L	<0.01	<0.01	0.20	<0.01	NR70
PFOA (335-67-1)		ug/L	<0.01	<0.01	0.50	<0.01	NR70
PFNA (375-95-1)		ug/L	<0.01	<0.01	0.020	<0.01	NR70
PFDA (335-76-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01	0.032	<0.01	NR70
PFPeS (2706-91-4)		ug/L	<0.01	<0.01	0.53	0.012	NR70
PFHxS (355-46-4)		ug/L	<0.01	0.030	3.4	0.047	NR70
PFHpS (375-92-8)		ug/L	<0.01	<0.01	0.16	<0.01	NR70
PFOS (1763-23-1)		ug/L	0.034	<0.02	10	0.048	NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01	0.043	<0.01	NR70
PFBS (375-73-5)		ug/L	<0.01	<0.01	0.46	0.043	NR70
PFOSA (754-91-6)		ug/L	<0.01	<0.01	0.084	<0.01	NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70

REPORT OF ANALYSIS

Lab Reg No.			N22/021565	N22/021566	N22/021568	N22/021569	
Date Sampled			24-OCT-2022	25-OCT-2022	25-OCT-2022	25-OCT-2022	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 FTS (39108-34-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)		%	151	154	153	149	NR70
PFPeA (Surrogate Recovery)		%	152	154	199	268	NR70
PFHxA (Surrogate Recovery)		%	157	149	138	145	NR70
PFHpA (Surrogate Recovery)		%	154	153	144	152	NR70
PFOA (Surrogate Recovery)		%	153	150	147	152	NR70
PFNA (Surrogate Recovery)		%	149	150	110	139	NR70
PFDA (Surrogate Recovery)		%	155	159	147	140	NR70
PFUdA (Surrogate Recovery)		%	154	144	134	128	NR70
PFDoA (Surrogate Recovery)		%	151	151	124	112	NR70
PFTeDA (Surrogate Recovery)		%	165	157	123	116	NR70
PFHxDA (Surrogate Recovery)		%	205	172	147	150	NR70
FOUEA (Surrogate Recovery)		%	138	134	126	132	NR70
PFBS (Surrogate Recovery)		%	143	143	141	141	NR70
PFHxS (Surrogate Recovery)		%	144	146	135	142	NR70
PFOS (Surrogate Recovery)		%	150	149	143	137	NR70
PFOSA (Surrogate Recovery)		%	148	149	126	117	NR70
N-MeFOSA (Surrogate Recovery)		%	137	134	117	96	NR70
N-EtFOSA (Surrogate Recovery)		%	139	132	112	88	NR70
N-MeFOSAA (Surrogate Recovery)		%	145	149	124	100	NR70
N-EtFOSAA (Surrogate Recovery)		%	146	140	120	93	NR70
N-MeFOSE (Surrogate Recovery)		%	143	138	123	101	NR70
N-EtFOSE (Surrogate Recovery)		%	146	133	116	98	NR70
4:2 FTS (Surrogate Recovery)		%	117	122	177	200	NR70
6:2 FTS (Surrogate Recovery)		%	118	120	132	121	NR70
8:2 FTS (Surrogate Recovery)		%	116	127	113	122	NR70
8:2 diPAP (Surrogate Recovery)		%	203	147	120	113	NR70
Dates							
Date extracted			7-NOV-2022	7-NOV-2022	7-NOV-2022	7-NOV-2022	
Date analysed			7-NOV-2022	7-NOV-2022	7-NOV-2022	7-NOV-2022	

N22/021565
to
N22/021570

PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
High PFAS surrogate recoveries accepted - results corrected for recovery.

REPORT OF ANALYSIS

Report No. RN1371573

Client	: [redacted]	**Job No.**	: AECO06/221102
		Quote No.	: QT-02018
		Order No.	: 60612563_3_1
		Date Received	: 02-NOV-2022
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	[redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N22/021570	0861_QC297_221026	WATER 2610.22

Lab Reg No.			N22/021570				
Date Sampled			26-OCT-2022				
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	<0.05				NR70
PFPeA (2706-90-3)		ug/L	<0.02				NR70
PFHxA (307-24-4)		ug/L	<0.01				NR70
PFHpA (375-85-9)		ug/L	<0.01				NR70
PFOA (335-67-1)		ug/L	<0.01				NR70
PFNA (375-95-1)		ug/L	<0.01				NR70
PFDA (335-76-2)		ug/L	<0.01				NR70
PFUdA (2058-94-8)		ug/L	<0.01				NR70
PFDoA (307-55-1)		ug/L	<0.01				NR70
PFTrDA (72629-94-8)		ug/L	<0.02				NR70
PFTeDA (376-06-7)		ug/L	<0.02				NR70
PFHxDA (67905-19-5)		ug/L	<0.02				NR70
PFODA (16517-11-6)		ug/L	<0.05				NR70
FOUEA (70887-84-2)		ug/L	<0.01				NR70
PFDS (335-77-3)		ug/L	<0.01				NR70
PFPeS (2706-91-4)		ug/L	<0.01				NR70
PFHxS (355-46-4)		ug/L	<0.01				NR70
PFHpS (375-92-8)		ug/L	<0.01				NR70
PFOS (1763-23-1)		ug/L	<0.02				NR70
PFNS (68259-12-1)		ug/L	<0.01				NR70
PFBS (375-73-5)		ug/L	<0.01				NR70
PFOSA (754-91-6)		ug/L	<0.01				NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02				NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02				NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01				NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01				NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05				NR70
N-EtFOSE (1691-99-2)		ug/L	<0.05				NR70
4:2 FTS (757124-72-4)		ug/L	<0.01				NR70
6:2 FTS (27619-97-2)		ug/L	<0.01				NR70

REPORT OF ANALYSIS

Lab Reg No.			N22/021570				
Date Sampled			26-OCT-2022				
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
8:2 FTS (39108-34-4)		ug/L	<0.01				NR70
10:2 FTS (120226-60-0)		ug/L	<0.01				NR70
8:2 diPAP (678-41-1)		ug/L	<0.02				NR70
PFBA (Surrogate Recovery)		%	151				NR70
PFPeA (Surrogate Recovery)		%	186				NR70
PFHxA (Surrogate Recovery)		%	146				NR70
PFHpA (Surrogate Recovery)		%	137				NR70
PFOA (Surrogate Recovery)		%	146				NR70
PFNA (Surrogate Recovery)		%	156				NR70
PFDA (Surrogate Recovery)		%	143				NR70
PFUdA (Surrogate Recovery)		%	143				NR70
PFDoA (Surrogate Recovery)		%	134				NR70
PFTeDA (Surrogate Recovery)		%	111				NR70
PFHxDA (Surrogate Recovery)		%	117				NR70
FOUEA (Surrogate Recovery)		%	126				NR70
PFBS (Surrogate Recovery)		%	136				NR70
PFHxS (Surrogate Recovery)		%	137				NR70
PFOS (Surrogate Recovery)		%	144				NR70
PFOSA (Surrogate Recovery)		%	131				NR70
N-MeFOSA (Surrogate Recovery)		%	112				NR70
N-EtFOSA (Surrogate Recovery)		%	108				NR70
N-MeFOSAA (Surrogate Recovery)		%	131				NR70
N-EtFOSAA (Surrogate Recovery)		%	122				NR70
N-MeFOSE (Surrogate Recovery)		%	117				NR70
N-EtFOSE (Surrogate Recovery)		%	110				NR70
4:2 FTS (Surrogate Recovery)		%	186				NR70
6:2 FTS (Surrogate Recovery)		%	125				NR70
8:2 FTS (Surrogate Recovery)		%	122				NR70
8:2 diPAP (Surrogate Recovery)		%	141				NR70
Dates							
Date extracted			7-NOV-2022				
Date analysed			7-NOV-2022				

[redacted]

09-NOV-2022

REPORT OF ANALYSIS

This Report supersedes reports: *RN1371529*

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
Chemical Accreditation 198: 105 Delhi Road, North Ryde, NSW, 2113

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/221102 **Sample Matrix:** Solid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		mg/kg	mg/kg	mg/kg	mg/kg	%	%	%
				N22/021567				
PFBA (375-22-4)	NR70	0.002	<0.002	<0.002	<0.002	-	117	NA
PFPeA (2706-90-3)	NR70	0.002	<0.002	<0.002	<0.002	-	107	NA
PFHxA (307-24-4)	NR70	0.001	<0.001	0.0032	0.0033	3.0	109	NA
PFHpA (375-85-9)	NR70	0.001	<0.001	<0.001	<0.001	-	107	NA
PFOA (335-67-1)	NR70	0.001	<0.001	0.0026	0.0026	0	113	NA
PFNA (375-95-1)	NR70	0.001	<0.001	<0.001	<0.001	-	114	NA
PFDA (335-76-2)	NR70	0.001	<0.001	<0.001	<0.001	-	107	NA
PFUdA (2058-94-8)	NR70	0.002	<0.002	<0.002	<0.002	-	105	NA
PFDoA (307-55-1)	NR70	0.002	<0.002	<0.002	<0.002	-	113	NA
PFTrDA (72629-94-8)	NR70	0.002	<0.002	<0.002	<0.002	-	113	NA
PFTeDA (376-06-7)	NR70	0.002	<0.002	<0.002	<0.002	-	107	NA
PFHxDA (67905-19-5)	NR70	0.002	<0.002	<0.002	<0.002	-	104	NA
PFODA (16517-11-6)	NR70	0.005	<0.005	<0.005	<0.005	-	86	NA
FOUEA (70887-84-2)	NR70	0.001	<0.001	<0.001	<0.001	-	110	NA
PFBS (375-73-5)	NR70	0.001	<0.001	<0.001	<0.001	-	112	NA
PFPeS (2706-91-4)	NR70	0.001	<0.001	<0.001	<0.001	-	117	NA
PFHxS (355-46-4)	NR70	0.001	<0.001	0.013	0.014	7.0	106	NA
PFHpS (375-92-8)	NR70	0.001	<0.001	<0.001	<0.001	-	113	NA
PFOS (1763-23-1)	NR70	0.002	<0.002	0.21	0.22	5.0	118	NA
PFNS (68259-12-1)	NR70	0.001	<0.001	0.0015	0.0015	0	108	NA
PFDS (335-77-3)	NR70	0.001	<0.001	0.006	0.0061	2.0	112	NA
PFOSA (754-91-6)	NR70	0.001	<0.001	<0.001	<0.001	-	110	NA
N-MeFOSA (31506-32-8)	NR70	0.002	<0.002	<0.002	<0.002	-	106	NA
N-EtFOSA (4151-50-2)	NR70	0.002	<0.002	<0.002	<0.002	-	106	NA
N-MeFOSAA (2355-31-9)	NR70	0.002	<0.002	<0.002	<0.002	-	106	NA
N-EtFOSAA(2991-50-6)	NR70	0.002	<0.002	<0.002	<0.002	-	114	NA
N-MeFOSE (24448-09-7)	NR70	0.005	<0.005	<0.005	<0.005	-	106	NA
N-EtFOSE (1691-99-2)	NR70	0.005	<0.005	<0.005	<0.005	-	102	NA
4:2 FTS (757124-72-4)	NR70	0.001	<0.001	<0.001	<0.001	-	106	NA
6:2 FTS (27619-97-2)	NR70	0.001	<0.001	<0.001	<0.001	-	106	NA
8:2 FTS (39108-34-4)	NR70	0.001	<0.001	<0.001	<0.001	-	115	NA
10:2 FTS (120226-60-0)	NR70	0.002	<0.002	<0.002	<0.002	-	118	NA
8:2 diPAP (678-41-1)	NR70	0.002	<0.002	<0.002	<0.002	-	111	NA

Results expressed in percentage (%) or mg/kg wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted] **Ryde**

Date: **8/11/2022**

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/221102 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	126	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	98	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	100	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	104	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	105	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	104	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	106	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	109	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	103	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	106	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	111	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	101	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	105	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	98	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	113	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	111	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	108	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	106	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	107	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	101	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	105	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	103	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	115	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	107	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	102	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	104	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	103	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	109	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	110	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	103	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	108	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date: **8/11/2022**

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: [redacted]

Email: [redacted]

Telephone: [redacted]

Fax:

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: [redacted]

Address: [redacted]

Email: [redacted]

Telephone: [redacted]

Fax:

SAMPLE DETAILS

NMI Job Name: AECO06/221115

Total No. of Samples: 1

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N22/022614	22-NOV-2022	0861_QC298	WATER 09/11/2022

SAMPLE RECEIVED CONDITION

Date samples received:	15-NOV-2022
Sample received in good order:	Yes
NMI Quotation no. provided:	60612563_3_1
Client purchase order number:	60612563_3_1
Temperature of samples:	Chilled
Comments:	ALL OK
Mode of Delivery:	Courier

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work.

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

NATA

REPORT OF ANALYSIS

Report No. RN1373013

Client	: [redacted]	**Job No.**	: AECO06/221115
		Quote No.	: QT-02018
		Order No.	: 60612563_3_1
		Date Received	: 15-NOV-2022
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N22/022614	0861_QC298	WATER 09/11/2022

Lab Reg No.		N22/022614				
Date Sampled		09-NOV-2022				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	ug/L	0.067				NR70
PFPeA (2706-90-3)	ug/L	0.025				NR70
PFHxA (307-24-4)	ug/L	0.13				NR70
PFHpA (375-85-9)	ug/L	0.013				NR70
PFOA (335-67-1)	ug/L	0.018				NR70
PFNA (375-95-1)	ug/L	<0.01				NR70
PFDA (335-76-2)	ug/L	<0.01				NR70
PFUdA (2058-94-8)	ug/L	<0.01				NR70
PFDoA (307-55-1)	ug/L	<0.01				NR70
PFTrDA (72629-94-8)	ug/L	<0.02				NR70
PFTeDA (376-06-7)	ug/L	<0.02				NR70
PFHxDA (67905-19-5)	ug/L	<0.02				NR70
PFODA (16517-11-6)	ug/L	<0.05				NR70
FOUEA (70887-84-2)	ug/L	<0.01				NR70
PFDS (335-77-3)	ug/L	<0.01				NR70
PFPeS (2706-91-4)	ug/L	0.15				NR70
PFHxS (355-46-4)	ug/L	1.1				NR70
PFHpS (375-92-8)	ug/L	<0.01				NR70
PFOS (1763-23-1)	ug/L	0.071				NR70
PFNS (68259-12-1)	ug/L	<0.01				NR70
PFBS (375-73-5)	ug/L	0.13				NR70
PFOSA (754-91-6)	ug/L	<0.01				NR70
N-MeFOSA (31506-32-8)	ug/L	<0.02				NR70
N-EtFOSA (4151-50-2)	ug/L	<0.02				NR70
N-MeFOSAA (2355-31-9)	ug/L	<0.01				NR70
N-EtFOSAA(2991-50-6)	ug/L	<0.01				NR70
N-MeFOSE (24448-09-7)	ug/L	<0.05				NR70
N-EtFOSE (1691-99-2)	ug/L	<0.05				NR70
4:2 FTS (757124-72-4)	ug/L	<0.01				NR70
6:2 FTS (27619-97-2)	ug/L	<0.01				NR70

REPORT OF ANALYSIS

Lab Reg No.		N22/022614				
Date Sampled		09-NOV-2022				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
8:2 FTS (39108-34-4)	ug/L	<0.01				NR70
10:2 FTS (120226-60-0)	ug/L	<0.01				NR70
8:2 diPAP (678-41-1)	ug/L	<0.02				NR70
PFBA (Surrogate Recovery)	%	103				NR70
PFPeA (Surrogate Recovery)	%	103				NR70
PFHxA (Surrogate Recovery)	%	97				NR70
PFHpA (Surrogate Recovery)	%	96				NR70
PFOA (Surrogate Recovery)	%	104				NR70
PFNA (Surrogate Recovery)	%	95				NR70
PFDA (Surrogate Recovery)	%	97				NR70
PFUdA (Surrogate Recovery)	%	90				NR70
PFDoA (Surrogate Recovery)	%	78				NR70
PFTeDA (Surrogate Recovery)	%	66				NR70
PFHxDA (Surrogate Recovery)	%	82				NR70
FOUEA (Surrogate Recovery)	%	82				NR70
PFBS (Surrogate Recovery)	%	79				NR70
PFHxS (Surrogate Recovery)	%	94				NR70
PFOS (Surrogate Recovery)	%	99				NR70
PFOSA (Surrogate Recovery)	%	75				NR70
N-MeFOSA (Surrogate Recovery)	%	59				NR70
N-EtFOSA (Surrogate Recovery)	%	55				NR70
N-MeFOSAA (Surrogate Recovery)	%	66				NR70
N-EtFOSAA (Surrogate Recovery)	%	61				NR70
N-MeFOSE (Surrogate Recovery)	%	65				NR70
N-EtFOSE (Surrogate Recovery)	%	59				NR70
4:2 FTS (Surrogate Recovery)	%	74				NR70
6:2 FTS (Surrogate Recovery)	%	84				NR70
8:2 FTS (Surrogate Recovery)	%	82				NR70
8:2 diPAP (Surrogate Recovery)	%	70				NR70
Dates						
Date extracted		18-NOV-2022				
Date analysed		18-NOV-2022				

N22/022614
PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

REPORT OF ANALYSIS

Lab Reg No.		N22/022614				
Date Sampled		09-NOV-2022				
	Units					Method

[redacted]

Organics - NSW
Accreditation No. 198

22-NOV-2022

NATA
WORLD RECOGNISED
ACCREDITATION

Accredited for compliance with ISO/IEC 17025 - Testing.
This report shall not be reproduced except in full.
Results relate only to the sample(s) as received and tested.

This Report supersedes reports: *RN1372998*

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
Chemical Accreditation 198: 105 Delhi Road, North Ryde, NSW, 2113

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/221115 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	104	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	100	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	95	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	100	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	105	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	98	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	95	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	95	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	103	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	104	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	105	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	102	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	95	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	99	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	101	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	133	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	101	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	101	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	100	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	99	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	103	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	102	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	101	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	104	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	99	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	98	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	99	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	94	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	91	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	111	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	104	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Organics Manager, NMI-North Ryde

Date: **22/11/2022**

Appendix F

Equipment Calibration Certificates

Appendix F Equipment Calibration Certificates

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP	**Project Number:**	60617963
Project Location:	RAAF Amberley	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Kennards
Make and Model:	YSI Pro Plus.
Serial Number:	

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	19/10/22 8:35				
Parameter	Acidity		Conductivity	Dissolved Oxygen	~~ORP~~
Units	pH	pH	µS/cm	~~ppm~~ %	~~ppm~~ mV
Calibration Standard Concentration:	7.0	4.0	2760	0	240
Calibration Reading:	6.99		2771		240.8
Calibration Temperature:	22.2		21.9		22.1

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	19/10/22 8:35				
Parameter	Acidity		Conductivity	Dissolved Oxygen	ORP
Units	pH	pH	µS/cm	~~ppm~~ %	~~ppm~~ mV
Calibration Standard Concentration:	7.0	4.0	2760	0	240
Bump Test Reading:	6.91		2470	0.6	251.7
Bump Test Temperature:	22.2		22.0	4.8	22.0

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each i[redacted]ted daily and bump tested as required by fieldwork staff.

Fieldwork Staff Signature _____ Date _____

Distribution: Project Central File

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP	**Project Number:**	60612563
Project Location:	RAAF Amberley	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Kennards
Make and Model:	YSI Pro +
Serial Number:	

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	20/10/22 8:50				
Parameter	Acidity		Conductivity	Dissolved Oxygen	ORP
Units	pH	pH	µS/cm	~~ppm~~ %D	~~ppm~~ mV
Calibration Standard Concentration:	7.00		2760	0.0	
Calibration Reading:	7.00		2765	0-0	
Calibration Temperature:	19.4		19.4	19.4	

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	20/10/22 8:50.				
Parameter	Acidity		Conductivity	Dissolved Oxygen	ORP
Units	pH	pH	µS/cm	~~ppm~~ %	~~ppm~~ mV
Calibration Standard Concentration:	7.00		2760.	8.0	240.0
Bump Test Reading:	7.12		2399.	0.14	242.2
Bump Test Temperature:	19.4		19.4	19.4	19.4

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each [redacted] and bump tested as required by fieldwork staff.

[redacted] — **Fieldwork Staff Signature**

20/10/22 — **Date**

Distribution: Project Central File

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	OMP Amberley	**Project Number:**	60612563
Project Location:	Amberley	**Client:**	Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	
Make and Model:	
Serial Number:	

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	21/10/2022 @ 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	ORP mV
Units	pH	pH	µS/cm	ppm	~~ppm~~
Calibration Standard Concentration:	7.00		2760	0.00	240
Bump Test Reading:	7.00		2765	0.00	236.8
Bump Test Temperature:	21.22		22.4	22.5	22.9

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

A[redacted]

☐ [redacted] daily and bump tested as required by fieldwork staff.

[redacted] 21/10/22.

Fieldwork Staff Signature — Date

Distribution: Project Central File

ANZ

AECOM

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	AMBERLEY	**Project Number:**	
Project Location:		**Client:**	
PM Name:	[redacted]	**Fieldwork Staff Name:**	

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	
Make and Model:	
Serial Number:	

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	24/10/22 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	ORP
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	7.00		2760.0	0.0	240.0
Bump Test Reading:	7.01		2773.0	0.2	241.1
Bump Test Temperature:	21.2	~~7~~	25.6	24.1	23.2

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] 24/10/22

Date

Distribution: Project [redacted]

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	AMBERLEY DMP	**Project Number:**	60612563
Project Location:	AMBERLEY RAFF	**Client:**	DEFENCE
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	KENNARDS
Make and Model:	USi
Serial Number:	

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	25/10/22 2300				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	7.00		2760		
Calibration Reading:	6.96		2766		
Calibration Temperature:	19.6		19.6		

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	ORP
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	7.00		2760	0.0	240
Bump Test Reading:	6.84		2697	0.03	243
Bump Test Temperature:	19.6		19.6	19.6	19.6

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]

Fieldwork Staff Signature **Date**

Distribution: Project Central File

ANZ

AECOM

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	DMP Q2 2022	**Project Number:**	60612563
Project Location:	AMBERLEY RAAF	**Client:**	DEFENCE
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	KENNARDS
Make and Model:	YSI PRO PLUS
Serial Number:	

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	26.10.22 0700				
Parameter	Acidity		Conductivity	Dissolved Oxygen	ORP
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	7.00		2760	0.0	240.0
Calibration Reading:	7.00		2764	0.0	241.8
Calibration Temperature:	21.2		21.2	21.2	21.2

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	ORP
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	7.00		2760	0.0	240.9
Bump Test Reading:	7.09		2798	0.0	234.9
Bump Test Temperature:	21.2		21.2	21.2	21.2

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] 26/10/22

[redacted]e Date

Distribution: Projec[redacted]

EQUIPMENT CERTIFICATION REPORT

KENNARDS HIRE

PGN9003842-9003846 - INTERFACE METER

Plant Number: 235280

Probe Length: 60 MT

ITEM	TEST	PASS	COMMENTS
Battery	Compartment / Capacity	☑	9v
Probe	Clean / Operation	☑	
Earth Lead	Check if equipped	☑	
Tape Check	Cleaned / Checked for cuts	☑	
Function test	At surface level	☑	

Note: Calibration traceability information is available upon request.

Please clean/decontaminate instrument and accessories before returning. A minimum 'Cleaning Fee' $55.00 (Inc GST) may apply if instrument is returned contaminated.

Checked By: [redacted] Date: 02/10/22 Signed: [redacted]

Accessories List:

Interface Meter	Tape Guide	Decon 90 Solution
Brush	Spare 9v Battery	Instruction Manual
Transport Box		

EQUIPMENT CERTIFICATION REPORT

KENNARDS HIRE

PGN9003871 WATER QUALITY METER – MULTIFUNCTION

Plant Number: 1072254

SENSOR	CONCENTRATION	SPAN 1	SPAN 2	TRACEABILITY	PASS
pH	pH 7.00 / pH 4.00	7.00 pH	4.00 pH	377339 380327	☑
Conductivity	2.76 mS/cm @ 25°C	2.76 mS/cm		377099	☑
Dissolved Oxygen	Sodium Sulphite / Air	0.0% in Sodium Sulphite	% Saturation in Air	12110	☑
ORP	240mV @ 25°C	240mV	-	7221	☑

Battery Status 100 %	Temperature 21 °C
	Electrodes Cleaned and Checked

Note: Calibration solution traceability information is available upon request.

Please clean/decontaminate instrument and accessories before returning. A minimum 'Cleaning Fee' $55.00 (Inc GST) may apply if instrument is returned contaminated.

Checked By: [redacted] Date: 17/10/22 Signed: [redacted]

Accessories List:

User's Manual & USB	pH Sensor	Conductivity Sensor
Dissolved Oxygen Sensor with Wetting Cap	Redox (ORP) Sensor with Wetting Cap	Flow Cell 500ml
Comm Cable	Testing Cap	Storage Cap

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 10D101443

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.00		386467	pH 7.01
2. pH 4.00		pH 4.00		394432	pH 4.01
3. ORP		231.4mV		385070/387761	231.9mV
4. EC		2760uS		385047	2760uS
5. D.O		100%		Fresh Air	99.2% - 752.9mmHg
6. Temp		23.9oC		MultiTherm 09000528	23.9oC

Calibrated by: [redacted]

Calibration date: **04-Nov-22**

Next calibration due: **4/12/2022**

Oil / Water Interface Meter

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Instrument **Interface Meter (60M)**
Serial No. **288107**

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Tested by: [redacted]

Test date: **4-Nov-22**

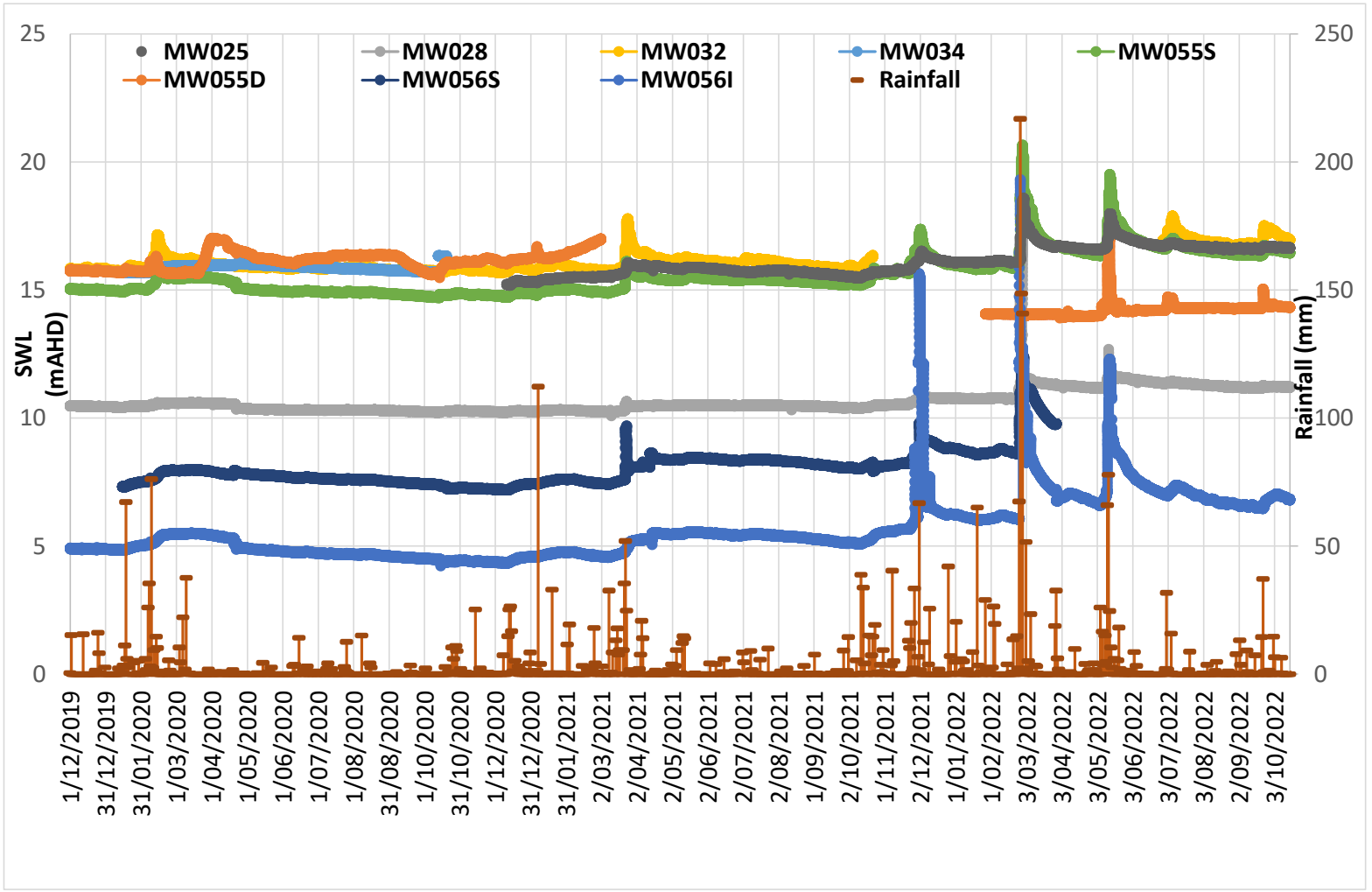
Next Test due: **4/02/2023**

Appendix G

Groundwater Level Data

Appendix G Groundwater Level Data

Chart G1 Groundwater Elevations and Rainfall December 2019 to October 2022



Prepared for
Department of Defence
ABN: 68706814312**DRAFT**

AECOM

Sampling Event Factual Report, April/May 2023

PFAS OMP - RAAF Base Amberley

27-Oct-2023
Doc No. 60612563_RP_075_4_231027

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Sampling Event Factual Report, April/May 2023

PFAS OMP - RAAF Base Amberley

Client: Department of Defence

ABN: 68706814312

Prepared by

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27-Oct-2023

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			Name/Position	Signature
0	14-Jun-2023	Draft	[redacted] Project Manager	
1	08-Aug-2023	Draft	[redacted] Project Manager	
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3	12-Sep-2023	Final	[redacted] Project Manager	
4	27-Oct-2023	Final	[redacted] Project Manager	[redacted]

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Abbreviations

Abbreviation	
AECOM	AECOM Australia Pty Ltd
ALS	Australian Laboratory Services
ASC NEPM	Assessment of Site Contamination National Environment Protection Measure 1999 (as amended 2013)
BoM	Bureau of Meteorology
COC	Chain of custody
CPSA	Confirmed primary source area
DCMM	Defence Contamination Management Manual
Defence	Department of Defence
DO	Dissolved Oxygen
EC	Electrical conductivity
FTA	Fire training area
HEPA	Heads of Environmental Protection Agencies
IP	Interface probe
LNAPL	Light non aqueous phase liquid
LOR	Limit of reporting
NATA	National Association of Testing Authorities
NEMP	National Environmental Management Plan
NHMRC	National Health and Medical Research Council
NMI	National Measurement Institute
OMP	Ongoing Monitoring Plan
ORP	Oxidation reduction potential
PFAS	Per- and poly-fluoroalkyl substances
PFHxS	Perfluorohexane sulfonate
PFOA	Perflurooctanoic acid
PFOS	Perflurooctanesulfonic acid
PMAP	PFAS Management Area Plan
QA/QC	Quality Assurance/Quality Control
RAAF	Royal Australian Air Force
QLD	Queensland
RPD	Relative percent difference
SAQP	Sampling analysis and quality plan
SWL	Standing water level

Units of Measurement			
L	Litres	m	Metre
mg	Milligram	ha	Hectares
kg	Kilogram	S	Siemens
mV	Millivolts	cm	Centimetre
µg	Microgram	mbtoc	Metres below top of casing
mAHD	Metres Australian height datum		

1.0 Introduction

1.1 General

AECOM Australia Pty Ltd (AECOM) has been engaged by the Department of Defence (Defence) to implement the per- and poly-fluoroalkyl substances (PFAS) Ongoing Monitoring Plan (OMP) (Defence, 2020) at the Royal Australian Air Force (RAAF) Base Amberley (the 'Base') and the Management Area in the South Queensland Region. The locations of the Base and Management Area are shown on **Figure 1** in **Appendix A**.

The OMP for RAAF Base Amberley (Defence, 2020) includes the following sampling events:

- Biannual groundwater, surface water and sediment sampling in April and October in 2020, 2021, and 2022.

In July 2022, Defence extended the period for the OMP sampling events by two years with additional groundwater sampling events scheduled for April 2023, October 2023 and April 2024.

Following each biannual sampling event, sampling event factual reports will be prepared. Annual Interpretive Reports will be prepared following the completion of each 12-month sampling period. This sampling event factual report has been prepared to report the results of the biannual sampling event completed in April / May 2023[1], specifically highlighting first-time detections and/or new exceedances of human health screening criteria for perflurooctanesulfonic acid (PFOS) + perfluorohexane sulfonate (PFHxS) and / or perflurooctanoic acid (PFOA).

This report has been prepared in accordance with the *PFAS OMP Factual Reports Guidance,* v 0.2, May 2021 (Defence, 2021).

1.2 Objectives

The objectives of the OMP are to:

- Implement the OMP prepared as part of the PFAS Management Area Plan (PMAP); and
- Collect data that will enable Defence to maintain an up to date understanding of the distribution, concentration and transport of PFAS at RAAF Base Amberley.

The data will assist in the timely identification of risks and inform Defence's approach to the management of PFAS, including updates and revisions to the PMAP.

The objective of this phase of works was to implement the scope of works for the April/May 2023 sampling event in general accordance with the sampling analysis and quality plan (SAQP) (AECOM, 2023a).

[1] Due to military exercises at RAAF Base Amberley in April 2023, the northern portion of the Base was not accessible and consequently sampling in this area was delayed until 22 and 23 May 2023. This sampling event is therefore referred to as the April-May 2023 sampling event.

2.0 Scope of Work

The sampling event at RAAF Base Amberley was completed in general accordance with the SAQP (AECOM, 2023a). In summary, the scope of works for this sampling event included:

- Obtaining access to private properties where some groundwater sampling locations are situated.
- Review of the SAQP prior to the monitoring event to ensure compliance with the following:
  - PFAS National Environmental Management Plan (NEMP) V2.0 (HEPA, 2020);
  - National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, as amended in 2013 (ASC NEPM, 2013);
  - Defence Routine Environment Water Quality Monitoring Manual, 2018;
  - Defence, Contamination Management Manual, 2018 amended 2021;
  - AS/NZ 5667:1998 Water quality – Sampling (Standards Australia 1998);
  - Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018);
  - Relevant State regulatory guidelines.
- Gauging of groundwater elevation in 38 of 40 monitoring wells prior to collection of samples (refer to **Table 1** below, and **Figure 2** in **Appendix A** for specific locations). Two monitoring wells (MW049 and MW056S) were not found and could not be gauged, refer to **Table 8** for more details.
- Collection of groundwater samples at 38 of 40 locations including 33 on-Base monitoring wells and five off-Base monitoring well locations. Details are included in **Table 1** below and **Figure 2** in **Appendix A**. Two monitoring wells (MW049 and MW056S) were not found and could not be sampled, refer to **Table 8** for more details.
- Collection of co-located surface water and sediment samples at 49 locations, including 42 on-Base locations, and seven off-Base locations (refer below to **Table 2** and **Table 3** and **Figure 3** in **Appendix A**). All 49 sediment samples were collected and 47 of 49 surface water samples. Two sampling locations were dry (SW033 and SW038) and surface water samples could not be collected during this sampling event. Refer to **Table 8** for more details.
- Downloading groundwater level data from data loggers installed in seven groundwater monitoring wells (MW025, MW028, MW032, MW055S, MW055D, MW056S, MW056I), refer to **Figure 2** in **Appendix A** for data logger locations. The datalogger from one monitoring well, MW056S could not be downloaded as the well could not be found. Partial data (until 31 January 2023) was downloaded from three dataloggers (MW028, MW055S and MW056I), refer to **Table 8** for more details.
- Collection of intra- and inter- laboratory duplicate samples at a rate of 1 in 10 primary samples, one field blank sample per day, one rinsate sample per fieldwork day and one trip blank per batch.
- Analysis of all samples for the PFAS suite at the standard limit of reporting (LOR).
- Data management of all OMP field and laboratory data in the Defence ESdat database.
- Preparation of results letters for off-Base stakeholders.
- Preparation of this Sampling Event Factual Report.

Table 1 Groundwater Sampling Locations

Location		Monitoring Wells
Source Areas	Former Topside Aviation Fire Training Area (FTA) and current FTA Fire Pad (Confirmed Primary Source Area [CPSA] A)	MW002, MW033
	B Hangar 410 and Former Landfill	MW047
	Frogs Hollow Former Fire Training School Location (CPSA B)	MW037
	Sewage Treatment Plant (CPSA D)	MW021, MW032
	Historical Containment Pond (CPSA E)	MW048
	Former Fire Training Area and Operational Testing Area (CPSA G)	MW050
	Former Fire Training Area and Operational Testing Area (CPSA J)	MW005
	Potential Former Fire Training Area and Operations Test Area (CPSA L)	MW006, MW023, MW028, MW029, MW036
	Former Fuel Farm 1 and Triple Interceptor Pit (CPSA M)	MW309
	Potential Location of Aircraft F-4E Incident (CPSA T)	MW035
	AFFF Wastewater Holding Tank (CPSA V)	MW046
	Fire Fighting Training School (CPSA W)	MW026, MW030, MW031, MW042, MW043
	Former Structural and Open Pit Fire Training Area and Former Secondary Fire Training Area (CPSA X and Y)	MW041
	Fuel UST with AFFF listing (CPSA Z)	MW020
	Triple Interceptor Pits at Engine Test Cell Facilities 1 and 2 (CPSA AA)	MW007
	Areas used for irrigation – former grassed runways (CPSA BB)	MW012
	Former Landfill (CPSA CC)	MW022
	Former Fire Training Area on Disused Runway (CPSA DD)	MW049
Off-Base Warrill Creek		*MW054S, MW054D,* MW057S, MW057I
On-Base Bremer River		MW024, MW025, MW034, MW044, MW055S, MW055D
Off-Base Bremer River		MW056S, MW056I

Note: *Italics* indicates that the well is located on private property.
Wells with S, D or I are adjacent monitoring wells that are screened in different aquifers. 'S' indicates the well is screened in the shallow aquifer, 'D' or 'I' indicates the well is screened in the deeper aquifer, either Tertiary Formation or Walloon Coal Measures. MW056I and MW057I were previously known as MW056D and MW057D. MW002 was formerly known as MW2.

Table 2 Surface Water Sampling Locations

Area	Surface Water Sampling Locations	Number of Locations
On-Base Drains	SW002, SW003, SW008, SW011, SW021, SW027, SW028, SW030, SW033, SW037, SW038, SW041, SW048, SW049, SW053, SW056, SW059, SW064, SW067, SW076, SW079, SW080	22
Warrill Creek	SW004, SW005, SW009, SW015, SW016, SW018**, SW020, SW026*, SW034, SW043*, SW099, SW100	12
Bremer River	SW025*, SW036, SW039*, SW040*, SW045*, SW047, SW050, SW051, SW052, SW088, SW089, SW090, SW091, SW094, SW098*	15

Note: * denotes off-Base sampling location. ** As SW018 was collected from a different location it was renamed SW304.

Table 3 Sediment Sampling Locations

Area	Sediment Sampling Locations	Number of Locations
On-Base Drains	SD002, SD003, SD008, SD011, SD021, SD027, SD028, SD030, SD033, SD037, SD038, SD041, SD048, SD049, SD053, SD056, SD059, SD079, SD064, SD067, SD076, SD080	22
Warrill Creek	SD004, SD005, SD009, SD015, SD016, SD018**, SD020, SD026*, SD034, SD043*, SD099, SD100	12
Bremer River	SD025*, SD036, SD039*, SD040*, SD045*, SD047, SD050, SD051, SD052, SD088, SD089, SD090, SD091, SD094, SD098*	15

Note: * denotes off-Base sampling location. ** As SW018 was collected from a different location it was renamed SD304.

3.0 Methodology

The methodology used for the April/May 2023 sampling event was completed in general accordance with the SAQP (AECOM, 2023a) and is summarised below. Deviations from the SAQP are discussed in **Section 3.6**.

3.1 Groundwater Sampling Methodology

The groundwater sampling methodology is outlined in **Table 4** below.

Table 4 Groundwater Sampling Methodology

Item	Details
Groundwater gauging	The depth to groundwater was measured in each monitoring well using an interface probe prior to the installation of HydraSleeves™, or if HydraSleeves™ were already installed, prior to retrieval of the HydraSleeve™. Where water level transducers were installed, the well was gauged prior to the removal of the water level transducer. Gauging was conducted in as short a time as possible, however, due to the number of wells and different requirements for accessing the monitoring well locations, the gauging took place over 11 days between 17 April and 23 May 2023. Water level transducers are installed in seven monitoring wells to continuously record groundwater levels (MW025, MW028, MW032, MW055S, MW055D, MW056S, MW056I). A barometric logger is installed in MW028. Data collected since the previous OMP sampling event in October 2022 were downloaded from MW025, MW028, MW032, MW055S, MW055D and MW056I. Monitoring wells MW056S could not be found so data were not downloaded. The water level transducer in MW055S was not functioning and was removed from the well. Data collected until 31 January 2023 was retrieved, however, no data for February to April 2023 was available. Partial data for MW028 and MW056I was also retrieved until 31 January 2023. The dataloggers were reset and reinstalled in the wells.
Field parameters	Temperature, electrical conductivity (EC), dissolved oxygen (DO), oxidation-reduction potential (ORP), pH and observations of water quality were recorded for all groundwater samples. Field parameters were obtained ex situ, using water remaining in the HydraSleeve™ following sampling. The probe on the water quality meter was decontaminated prior to being placed in the water sample.
Sampling methodology	Groundwater samples were collected from the monitoring wells using no-purge methodology HydraSleeves™, which were installed within the screened interval of each well (based on a review of the well construction log) for a minimum of 24 hours prior to the sampling round. Once sampling was completed, new HydraSleeves™ were deployed at the screened interval depth in 17 of the monitoring wells in preparation for the next sampling round. HydraSleeves™ were not installed in 21 monitoring wells as they are regularly used for monitoring on other programs. Bailers were used to collect groundwater samples from two monitoring wells, MW024 and MW031.
QA/QC samples	Field QA/QC (Quality Assurance/Quality Control) samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), field blanks, rinsate samples and trip blanks. Refer to **Appendix C** for assessment of QA/QC sample data. Equipment calibration certificates are presented in **Appendix F**.
Sample analysis	All primary samples were submitted for analysis for the PFAS suite using the standard LOR. ALS Environmental (ALS) Brisbane, Queensland was used as the primary laboratory. The National Measurement Institute (NMI) of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for groundwater analyses are certified by the National Association of Testing Authorities (NATA). Chain of custody (COC) forms are presented in **Appendix D**, laboratory analytical certificates are presented in **Appendix E**.

3.2 Surface Water Sampling Methodology

The methodology used for the April/May 2023 sampling event was completed in general accordance with the SAQP (AECOM, 2023a) and is summarised in **Table 5** below.

Table 5 Surface Water Sampling Methodology

Item	Details
Field parameters	Temperature, EC, DO, ORP, pH and observations of water quality were recorded for all surface water samples.
Sample collection methodology	Samples were collected from immediately below the water surface to minimise collection of sediment or floating materials in the samples. At each location, a new, laboratory supplied container was lowered into the water with the cap immediately applied once the container was full.
QA/QC Samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), field blanks, rinsate samples and trip blanks. Refer to **Appendix C** for assessment of QA/QC sample data. Equipment calibration certificates are presented in **Appendix F**.
Sample analysis	All primary samples were submitted for PFAS suite using the standard LOR. ALS Brisbane, Queensland was used as the primary laboratory. NMI of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for surface water analyses were certified by the NATA. COC forms are presented in **Appendix D**, laboratory analytical certificates are presented in **Appendix E**.

3.3 Sediment Sampling Methodology

The methodology used for the April/May 2023 sampling event was completed in general accordance with the SAQP (AECOM, 2023a) and is summarised in **Table 6** below.

Table 6 Sediment Sampling Methodology

Item	Details
Sample collection methodology	Samples representative of potentially deposited sediments were collected from within the water body where possible. Sediment samples were collected either by hand using new nitrile gloves or from the scoop on the sampling pole. A new laboratory-supplied container was filled at each location.
Logging	Sediment characterisation details were recorded for each sample.
QA/QC samples	Field QA/QC samples collected included intra-laboratory duplicate and inter-laboratory duplicate samples (i.e. splits), field blanks, rinsate samples and trip blanks. Refer to **Appendix C** for assessment of QA/QC sample data. Equipment calibration certificates are presented in **Appendix F**.
Sample analysis	All primary samples were submitted for PFAS suite using the standard LOR. ALS Brisbane, Queensland was used as the primary laboratory. NMI of Sydney, NSW was used as the secondary laboratory. ALS and NMI methods for sediment analyses were certified by the NATA. COC forms are presented in **Appendix D**, laboratory analytical certificates are presented in **Appendix E**.

3.4 Adopted Screening Criteria

Adopted screening criteria references national guidance in the form of the PFAS National Environmental Management Plan, Defence estate and environmental strategies, and Defence PFAS-specific strategies and guidance. Guidance documents used to assess the dataset includes the following:

- PFAS NEMP, V2.0 (HEPA, 2020);
- Department of Health, 2019. *Health Based Guidance Values for PFAS for use in site investigations in Australia,* September 2019;
- NHMRC, 2019. *Guidance on PFAS in Recreational Water*, August 2019 (NHMRC, 2019);
- *National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1, as amended in 2013* (ASC NEPM, 2013).

In accordance with the OMP (Defence, 2020) and SAQP (AECOM, 2023a), the adopted PFAS screening criteria to assess the data generated as part of the OMP are presented in **Table 7** below.

Table 7 Summary of Adopted Screening Criteria

Pathway	Compound	Criteria	Comment / Reference
Human Health Receptors			
Drinking water – groundwater	PFOS + PFHxS	0.07 µg/L	The values are from the PFAS NEMP (HEPA, 2020). *All groundwater results will be compared to these criteria.*
	PFOA	0.56 µg/L	
Recreational use – surface water	PFOS + PFHxS	2 µg/L	The values presented are from the PFAS NEMP (HEPA, 2020), which are sourced from NHMRC (2019). *All surface water results will be compared to these criteria.*
	PFOA	10 µg/L	
Ecological Receptors			
Freshwater (95% species protection values)	PFOS	0.13 µg/L	The values are from the PFAS NEMP (HEPA, 2020). *All surface water and groundwater results will be compared to these criteria.*
	PFOA	220 µg/L	
Freshwater (99% species protection values)	PFOS	0.00023 µg/L	
	PFOA	19 µg/L	

There are no current HEPA (2020) endorsed human health or ecological guideline values available for PFAS in sediment.

3.5 Data Quality Objectives and Data Validation

The data quality objectives and data quality indicators adopted for these works are presented in the SAQP (AECOM, 2023a).

Data validation assessment is provided in **Appendix C**. Data validation procedure employed in the assessment of the field and laboratory QA/QC data indicated that, with one exception, the reported analytical results are representative of the sample locations and that the overall quality of the analytical data produced is acceptably reliable for the purpose of this report.

The reported concentrations for SW/SD018 were different compared to historical results, and it was identified that the samples were collected from a drainage channel entering Warrill Creek, rather than

Warrill Creek. Consequently, these samples have been allocated new sampling identification numbers (SW/SD304).

All data collected during this event has been reviewed and uploaded to the Defence ESdat database in accordance with Defence Contamination Management Manual (Defence, 2018) Annex L Guidance on Data Management (amended 2021) requirements.

3.6 Deviations from the SAQP

Table 8 lists the deviations from the SAQP (AECOM, 2023a) during this sampling event. The deviations are considered to be of low significance and have a minimal impact on the sampling event results.

Table 8 Deviations from the SAQP during Sampling Event for April / May 2023

SAQP	April / May 2023 Sampling Event	Impact on OMP Program
Collection of groundwater samples at 40 locations	• MW049 and MW056S could not be sampled as they could not be found due to the presence of dense vegetation.	• The non-sampling of MW049 and MW056S reduced the spatial coverage of the groundwater monitoring network to the south and east of the Base.
Collection of surface water samples at 49 locations	• Two surface water samples were not collected at SW033 and SW038 as these locations were dry. • Anomalous results for SW018 indicated the samples SW/SD018 were inadvertently collected from a drainage channel entering Warrill Creek rather than Warrill Creek.	• The non-sampling of SW033 and SW038 means there are no data available to evaluate PFAS concentrations at these drain locations. The non-presence of water means there were no PFAS migrating in surface water at the time of the visit. • Sampling results for SW/SD018 have been reallocated to a new sampling identification number, SW/SD304.
Download of data from seven data loggers	• The datalogger from MW056S could not be retrieved as the well could not be found. • The datalogger in MW055S was not functioning. Data collected until 31 January 2023 was able to be retrieved. • Data from MW028 and MW056I were available until 31 January 2023.	• Groundwater level data from MW056S is not available. This reduces the understanding of groundwater level changes in 2022-2023 at this off-site area adjacent to Bremer River. • Groundwater level data in MW055S, MW028 and MW056I between February and April 2023 were not available. This reduces the understanding of groundwater level changes in 2023 at these portion of the Base near Bremer River. The datalogger in MW055S was replaced later in May 2023. The dataloggers in MW028 and MW056I were reset and reinstalled in the wells.
Groundwater methodology	• Two monitoring wells, MW024 and MW031, were sampled by bailing.	• Overall, there is not expected to be an impact by using bailing. However, the sample from MW024 reported a new maximum sum of PFOS and PFHxS concentration. The laboratory report indicated that LORs for PFAS were raised due to matrix interference. The elevated concentrations in the sample from MW024 could potentially be due to the presence of sediment in the bailed

SAQP	April / May 2023 Sampling Event	Impact on OMP Program
		sample. Resampling of the well in October 2023 will verify the concentrations.
Collection of samples during a single sampling event	• Due to military exercises in the Hansens Farm Conservation Area (northern portion of Base), access was restricted until 23 May 2023, which delayed the collection of samples by three weeks.	• The delay of three weeks in completing sampling is considered to be a relatively short period and is unlikely to impact the OMP program.
Collection of water quality field parameters	• The DO sensor on the water quality meter was malfunctioning during the sampling event. DO measurements could not be collected for nine surface water samples and three groundwater samples.	• The non-collection of DO measurements has minimal impact on the sampling event as a large dataset has been collected.

4.0 Field Observations and Results

The April/May 2023 sampling event was completed between 17 April and 23 May 2023. The results are summarised in following sections.

4.1 Groundwater

4.1.1 Groundwater Observations and Field Measurements

Table 9 Groundwater Observations and Field Measurements

Item	Details
Access	All monitoring wells were accessible except for MW049 and MW056S which were not found due to heavy vegetation.
Monitoring well network	No issues were identified in 36 monitoring wells sampled. The gatic covers at two locations were damaged, MW042 and MW050.
Field observations	Groundwater from one monitoring well had a sulfuric odour (MW033). Groundwater from five monitoring wells had an organic odour (MW041, MW043, MW044, MW046, MW056I). No other visible or olfactory indications of contamination were observed during the sampling of the other monitoring wells. Field observations are presented in **Table T1** in **Appendix B**.
Depth to groundwater	Depth to groundwater in the Alluvium was between 2.29 and 14.98 metres below top of casing (mbtoc). Depth to groundwater in the Tertiary Formation was between 5.67 and 15.95 mbtoc. Depth to groundwater in the Walloon Coal Measures was between 5.43 and 24.34 mbtoc. Groundwater elevation in the Alluvium was between 9.29 and 18.44 metres above Australian height datum (mAHD). Groundwater elevation in the Tertiary Formation was between 8.73 and 29.00 mAHD. Groundwater elevation in the Walloon Coal Measures was between 14.04 and 38.09 mAHD. Groundwater gauging data are presented in **Table T1** in **Appendix B**. Water level transducer results for six monitoring wells are presented in **Appendix G**.
Groundwater flow direction	Inferred groundwater contours and groundwater flow directions at the Base in April/May 2023 for the Alluvium/Tertiary Formation are shown on **Figure 4** in **Appendix A**. The inferred local groundwater flow direction is towards the northeast, east and southeast in the direction of Bremer River and Warrill Creek. The inferred flow direction is consistent with previous sampling events (AECOM, 2023b). Inferred groundwater contours and groundwater flow directions at the Base in April/May 2023 for the Walloon Coal Measures are shown on **Figure 5** in **Appendix A**. The inferred local groundwater flow direction is towards the northeast and east in the direction of Bremer River and Warrill Creek. The inferred flow direction is consistent with previous sampling events (AECOM, 2023b).

<table>
<tr><th>Item</th><th>Details</th></tr>
<tr><td>Groundwater quality parameter field measurements</td><td>Groundwater quality parameters were measured ex situ, using water remaining in the HydraSleeve™ following sampling. The readings are presented in Table T1 in Appendix B and are summarised per geological unit in the table below:
<table>
<tr><th>Unit</th><th>Parameter</th><th>Min.</th><th>Max.</th><th>Comment</th></tr>
<tr><td rowspan="5">Alluvium</td><td>DO (mg/L)</td><td>0.35</td><td>3.80</td><td>Poorly to moderately oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>332</td><td>4707</td><td>Fresh to brackish</td></tr>
<tr><td>pH</td><td>5.32</td><td>7.38</td><td>Slightly acidic to near neutral</td></tr>
<tr><td>ORP (mV)</td><td>114</td><td>380</td><td>Mildly to strongly reducing</td></tr>
<tr><td>Temperature (°C)</td><td>18.3</td><td>25.1</td><td>-</td></tr>
<tr><td rowspan="5">Tertiary Formation</td><td>DO (mg/L)</td><td>0.50</td><td>2.19</td><td>Poor to mildly oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>368</td><td>4135</td><td>Fresh to brackish</td></tr>
<tr><td>pH</td><td>5.85</td><td>7.34</td><td>Slight acidic to near neutral</td></tr>
<tr><td>ORP (mV)</td><td>212</td><td>330</td><td>Moderately reducing</td></tr>
<tr><td>Temperature (°C)</td><td>21.7</td><td>25.1</td><td>-</td></tr>
<tr><td rowspan="5">Walloon Coal Measures</td><td>DO (mg/L)</td><td>0.13</td><td>3.60</td><td>Poorly to moderately oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>362</td><td>15277</td><td>Fresh to saline</td></tr>
<tr><td>pH</td><td>6.30</td><td>7.42</td><td>Near neutral</td></tr>
<tr><td>ORP (mV)</td><td>107</td><td>367</td><td>Mildly to strongly reducing</td></tr>
<tr><td>Temperature (°C)</td><td>19.6</td><td>28.5</td><td>-</td></tr>
</table>
The measured parameter ranges are consistent with previous sampling event results (AECOM 2023b).</td></tr>
<tr><td>Weather conditions</td><td>Weather conditions during groundwater sampling were dry and sunny with maximum daily temperatures between 23.1 and 30.2°C. A total of 64.6 mm of rainfall was recorded during the sampling period between 17 April and 23 May 2023 (Bureau of Meteorology (BoM) station 040004 – ‘Amberley) with the majority occurring during rainfall events between 15 and 17 May 2023 (54.6 mm).</td></tr>
<tr><td>Estate management works or training activities</td><td>During the sampling event, remediation works relating to one of the main source areas, the sewage treatment plant, commenced in April 2023. The remediation works involved excavation of soil and stockpiling within an area adjacent to the southern portion of the Base, near MW032 and Warrill Creek.</td></tr>
</table>

4.1.2 Groundwater Analytical Results

The groundwater analytical results for PFAS from the sampling event are presented in **Table T2** in **Appendix B**. There was one new exceedance of the drinking water guideline value for sum of PFOS and PFHxS in the sample from MW024 (0.16 µg/L) located in the eastern portion of the Base adjacent to Bremer River. The laboratory report identified that the LORs were raised in the sample from MW024 due to matrix interference indicating the potential presence of sediment in the water sample and the detection of elevated PFAS concentration may be due to analysis of sediment. There were no first-time detections of PFAS compared to the historical dataset. A summary is presented in **Table 10**. The location of MW024 is shown on **Figure 6** in **Appendix A**.

Concentrations of sum of PFOS and PFHxS in 22 of the 38 groundwater samples exceeded the NEMP (HEPA, 2020) drinking water guideline value with eight groundwater samples exceeding the NEMP (HEPA, 2020) PFOA drinking water guideline value[2].

PFAS were detected above the LOR in 28 of the 38 groundwater samples collected and all these samples exceeded the NEMP (HEPA, 2020) ecological guideline value for PFOS for 99% protection of

[2] The number of exceedances identified only includes the primary samples. Quality assurance samples have not been included.

ecosystems with 20 of these samples also exceeding the 95% protection guideline value. None of the groundwater samples exceeded the NEMP (HEPA, 2020) PFOA ecological guideline values for 99% and 95% protection of freshwater species.

There were seven new maximum sum of PFOS and PFHxS concentrations recorded during the sampling event in groundwater samples from MW020 (134 µg/L), MW021 (142 µg/L), MW024 (0.16 µg/L), MW030 (12.9 µg/L), MW043 (0.70 µg/L), MW044 (0.04 µg/L) and MW050 (0.35 µg/L). There were three new maximum PFOA concentrations recorded in the samples from MW020 (5.59 µg/L), MW021 (4.45 µg/L) and MW030 (1.37 µg/L).

Table 10 First-time Detections or New Exceedances of Sum of PFOS and PFHxS or PFOA in Groundwater

First-time Detection / New Exceedance	Ground water sampling location	Sum of PFOS+PFHxS concentration (µg/L)		PFOA concentration (µg/L)	
		April/May 2023	Historical maximum	April/May 2023	Historical maximum
First-time detection or new exceedance of PFOS and PFHxS or PFOA in groundwater	MW024	0.16	0.04	<0.01	<0.01

Note: Yellow shading indicates a sample with a new exceedance above NEMP (HEPA, 2020) human health drinking water guideline value (refer to **Table 7**), blue indicates a first-time detection.

4.2 Surface Water

4.2.1 Surface Water Observations and Field Measurements

Table 11 Surface Water Observations and Field Measurements

<table>
<tr><th>Item</th><th>Details</th></tr>
<tr><td>Access</td><td>All surface water sampling locations were accessed during the sampling event. Two locations were dry (SW033 and SW038) and surface water samples could not be collected.</td></tr>
<tr><td>Field observations</td><td>A slight sheen was observed at sampling location SW041, a drain sample location. Organic odours were observed at 15 locations (SW015, SW025, SW026, SW040, SW043, SW045, SW051, SW053, SW064, SW067, SW079, SW080, SW098, SW099, SW100). No visual or olfactory indications of contamination were observed during the sampling of the other surface water sampling locations. Field observations are reported in Table T3, Appendix B.</td></tr>
<tr><td>Surface water quality parameter field measurements</td><td>Surface water quality parameters were measured prior to collecting surface water samples. The readings are presented in Table T3 in Appendix B and are summarised below:
<table>
<tr><th>Unit</th><th>Parameter</th><th>Min.</th><th>Max.</th><th>Comment</th></tr>
<tr><td rowspan="5">Drain</td><td>DO (mg/L)</td><td>0.37</td><td>3.32</td><td>Poorly to moderately oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>137</td><td>1045</td><td>Fresh</td></tr>
<tr><td>pH</td><td>6.55</td><td>9.49</td><td>Near neutral to alkaline</td></tr>
<tr><td>ORP (mV)</td><td>177</td><td>298</td><td>Moderately reducing</td></tr>
<tr><td>Temperature (°C)</td><td>17.8</td><td>29.2</td><td>-</td></tr>
<tr><td rowspan="5">Warrill Creek</td><td>DO (mg/L)</td><td>0.27</td><td>1.28</td><td>Poorly to mildly oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>209</td><td>709</td><td>Fresh</td></tr>
<tr><td>pH</td><td>6.80</td><td>7.97</td><td>Near neutral to slightly alkaline</td></tr>
<tr><td>ORP (mV)</td><td>213</td><td>245</td><td>Moderately reducing</td></tr>
<tr><td>Temperature (°C)</td><td>19.4</td><td>22.1</td><td>-</td></tr>
<tr><td rowspan="5">Bremer River</td><td>DO (mg/L)</td><td>0.74</td><td>8.40</td><td>Poorly to well oxygenated</td></tr>
<tr><td>EC (µS/cm)</td><td>253</td><td>1774</td><td>Fresh to brackish</td></tr>
<tr><td>pH</td><td>5.17</td><td>8.17</td><td>Slightly acidic to slightly alkaline</td></tr>
<tr><td>ORP (mV)</td><td>213</td><td>458</td><td>Mildly to moderately reducing</td></tr>
<tr><td>Temperature (°C)</td><td>13.1</td><td>23.5</td><td>-</td></tr>
</table>
The measured parameter ranges are consistent with previous sampling event results (AECOM 2023b).</td></tr>
<tr><td>Weather Conditions</td><td>Weather conditions during groundwater sampling were dry and sunny with maximum daily temperatures between 23.1 and 30.2°C. A total of 64.6 mm of rainfall was recorded during the sampling period between 17 April and 23 May 2023 (BoM station 040004 – ‘Amberley) with the majority occurring during rainfall events between 15 and 17 May 2023 (54.6 mm).</td></tr>
<tr><td>Estate Management Works or Training Activities</td><td>During the sampling event, remediation works relating to one of the main source areas, the sewage treatment plant, commenced in April 2023. The remediation works involved excavation of soil and stockpiling within an area adjacent to the southern portion of the Base, near MW032 and Warrill Creek.</td></tr>
</table>

4.2.2 Surface Water Analytical Results

The analytical results for PFAS in surface water from this sampling event are presented in **Table T4** in **Appendix B**. As discussed in **Section 3.5** and **Appendix C**. There were no first-time detections or new exceedances of sum of PFOS and PFHxS and PFOA, other than the new sampling location, SW304 located at the point where a drainage channel enters Warrill Creek (sum of PFOS and PFHxS was 16.1 µg/L and PFOA was 0.15 µg/L). The concentration of sum of PFOS and PFHxS exceeded the NEMP (HEPA, 2020) recreational water guideline value. The ecological guideline for PFOS for 99% species protection of ecosystems was also exceeded.

Concentrations of sum of PFOS and PFHxS in 15 of the 47 surface water samples exceeded the NEMP (HEPA, 2020) recreational water guideline value with none of the samples exceeding the PFOA guideline value.

A total of 38 of 47 samples exceeded the NEMP (HEPA, 2020) ecological guideline for PFOS for 99% protection of ecosystems with 22 of these samples also exceeding the 95% protection guideline value. None of the samples exceeded the NEMP (HEPA, 2020) PFOA ecological guideline values for either 95% or 99% protection of freshwater species.

New maximum sum of PFOS and PFHxS concentrations were recorded in the surface water samples from SW005 (17.6 µg/L), SW052 (0.03 µg/L) and SW100 (0.28 µg/L). New maximum concentrations of PFOA were recorded in the samples from SW005 (0.25 µg/L) and SW049 (0.07 µg/L).

4.3 Sediment

4.3.1 Sediment Observations and Field Measurements

Table 12 Sediment Observations

Item	Details
Access	All sediment sample locations were accessible.
Field Observations	Sediment logging data are presented in **Table T5** in **Appendix B**. 42 of the 49 samples had an organic odour. No visible indications of contamination were observed during sediment sampling.
Weather Conditions	Weather conditions during groundwater sampling were dry and sunny with maximum daily temperatures between 23.1 and 30.2°C. A total of 64.6 mm of rainfall was recorded during the sampling period between 17 April and 23 May 2023 (BoM station 040004 – 'Amberley) with the majority occurring during rainfall events between 15 and 17 May 2023 (54.6 mm).
Estate Management Works or Training Activities	During the sampling event, remediation works relating to one of the main source areas, the sewage treatment plant, commenced in April 2023. The remediation works involved excavation of soil and stockpiling within an area adjacent to the southern portion of the Base, near MW032 and Warrill Creek.

4.3.2 Sediment Analytical Results

The analytical results for PFAS in sediment from this sampling event are presented in **Table T6** in **Appendix B**. There was one first-time detection from the historical dataset. This was in the sample from SD025, which reported a concentration slightly above the limit of reporting (0.0005 mg/kg). The location of SD025 is shown on **Figure 8**, **Appendix A**. The new location SD304 also recorded a first-time detection with sum of PFOS and PFHxS up to 0.223 mg/kg in the triplicate sample (QC210) and up to 0.0006 mg/kg in the duplicate sample (QC110). New maximum sum of PFOS and PFHxS concentrations were recorded at SD008 (0.262 mg/kg), SD009 (0.0725 mg/kg), SD025 (0.0005 mg/kg), SD041 (1.80 mg/kg), SD045 (0.0084 mg/kg), SD052 (0.0015 mg/kg), SD079 (1.94 mg/kg). A new maximum concentration of PFOA was recorded at SD079 (0.018 mg/kg).

5.0 Summary and Next Sampling Event

5.1 Summary of Sampling Event

A groundwater, surface water and sediment sampling event was completed within the RAAF Base Amberley Management Area between 17 April and 23 May 2023. The program included sampling of groundwater from 40 monitoring wells and 49 co-located surface water and sediment sampling locations. In total, 38 groundwater samples 47 surface water samples and 49 sediment samples were collected and analysed.

Table 13 summarises the findings of the April/May 2023 sampling event and the recommended actions.

Table 13 Summary of Sampling Event

Item	Comment	Recommended Actions
Access to sampling locations	All groundwater sampling locations were accessible except for MW049 and MW056S due to the presence of heavy vegetation. All surface water and sediment samples were collected except for surface water samples from SW033 and SW038 as these locations were dry at the time of sampling.	The locations of MW049 and MW056S are heavily vegetated. The off-Base location MW056S would need to mowed by the Council to allow the monitoring well to be found. Surface water sampling locations SW033 and SW038 should be reinspected during the next sampling event in October 2023. Sampling of on-Base drains should continue to be timed to occur after a rainfall event.
Groundwater level loggers	Data from six groundwater level loggers were retrieved and data downloaded. The datalogger installed in MW056S could not be retrieved as the monitoring well could not be found due to the presence of heavy vegetation. The datalogger in MW055S was not functioning, however, data until 31 January 2023 was retrieved. Dataloggers in MW028 and MW056I only recorded data until 31 January 2023.	The datalogger from MW056S will be retrieved in the next sampling event, if the monitoring well is found. The datalogger in MW055S was replaced later in May 2023. The dataloggers in MW028 and MW056I were reset and reinstalled in the wells.
Monitoring well network condition	No issues were identified in 36 of the 38 monitoring wells sampled. The gatic covers for MW042 and MW050 have been damaged.	The gatic covers for MW042 and MW050 require repair.
Analytical results	Sum of PFOS and PFHxS or PFOA concentrations in 37 out of 38 groundwater samples were consistent with historical results. Seven groundwater sampling locations reported new maximum concentrations or either sum of PFOS and PFHxS or PFOA. The result from SW/SD018 were considered anomalous and indicated a drainage channel was sampled rather than Warrill Creek. These results were	Ongoing monitoring in accordance with the OMP. A review of the OMP is being conducted during 2023 which may change the October 2023 and April 2024 sampling events.

Item	Comment	Recommended Actions
	allocated new sampling identification numbers (SW/SD304). Sum of PFOS and PFHxS or PFOA concentrations in the other 46 surface water samples collected were consistent with historical results. Four surface water sampling locations reported new maximum concentrations. Sum of PFOS and PFHxS or PFOA concentrations were consistent with historical results in all sediment samples. Eight sediment samples reported new maximum concentrations for sum of PFOS and PFHxS or PFOA.	
First-time detections of sum of PFOS and PFHxS or PFOA	A first-time detection of sum of PFOS and PFHxS was reported for sediment sample SD025. The concentration was equal to the laboratory limit of reporting. No first-time detections of sum of PFOS and PFHxS or PFOA above the laboratory LOR were recorded in any of the groundwater, surface water or other sediment samples collected, other than the new sampling location, SW/SD304 and sediment sample SD025.	Ongoing monitoring in accordance with the OMP.
New exceedance of NEMP (HEPA, 2020) guideline values	There was one new exceedance of the NEMP (HEPA, 2020) drinking water guideline value in groundwater. This was the sample from MW024. There was one new exceedance of the NEMP (HEPA, 2020) recreational water guideline value and one new exceedance of the ecological (99% species protection) guideline value in surface water. This was in the sample from SW304.	Ongoing monitoring in accordance with the OMP.

5.2 Upcoming Sampling Events

The next biannual sampling event is scheduled for October 2023.

5.3 Upcoming Interpretive Report

At the time of preparing this report, an interpretive report covering the period March 2021 to May 2023 is in preparation.

6.0 References

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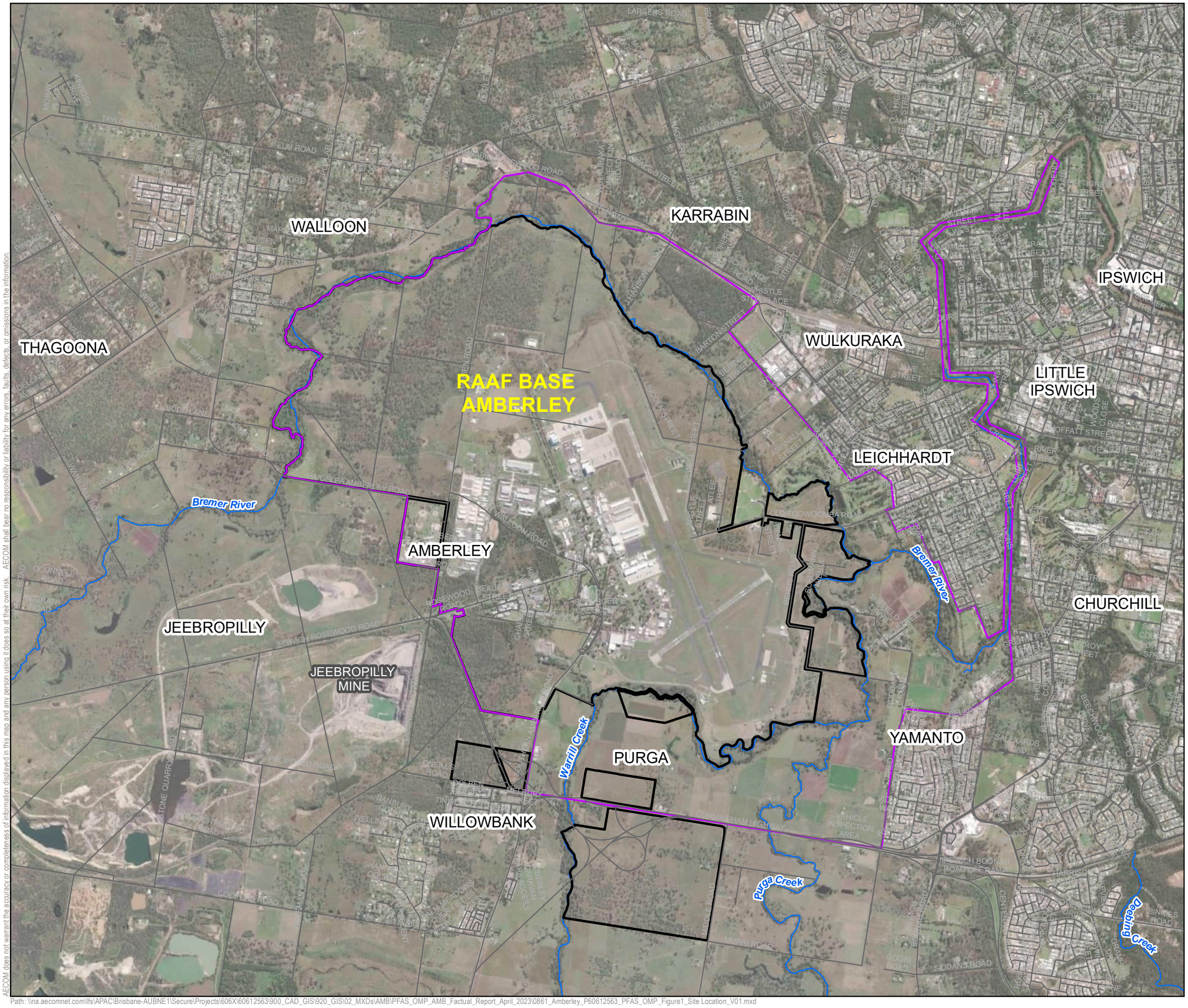
Appendix A

Figures

Appendix A Figures



LEGEND

- Management Area
- Base Boundary
- Watercourses

N

0 0.5 1 km

AECOM

SCALE	1:38,000
SIZE	A3
SHEET	
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 1: RAAF BASE AMBERLEY LOCATION

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY SAMPLING EVENT,
FACTUAL REPORT: APRIL/MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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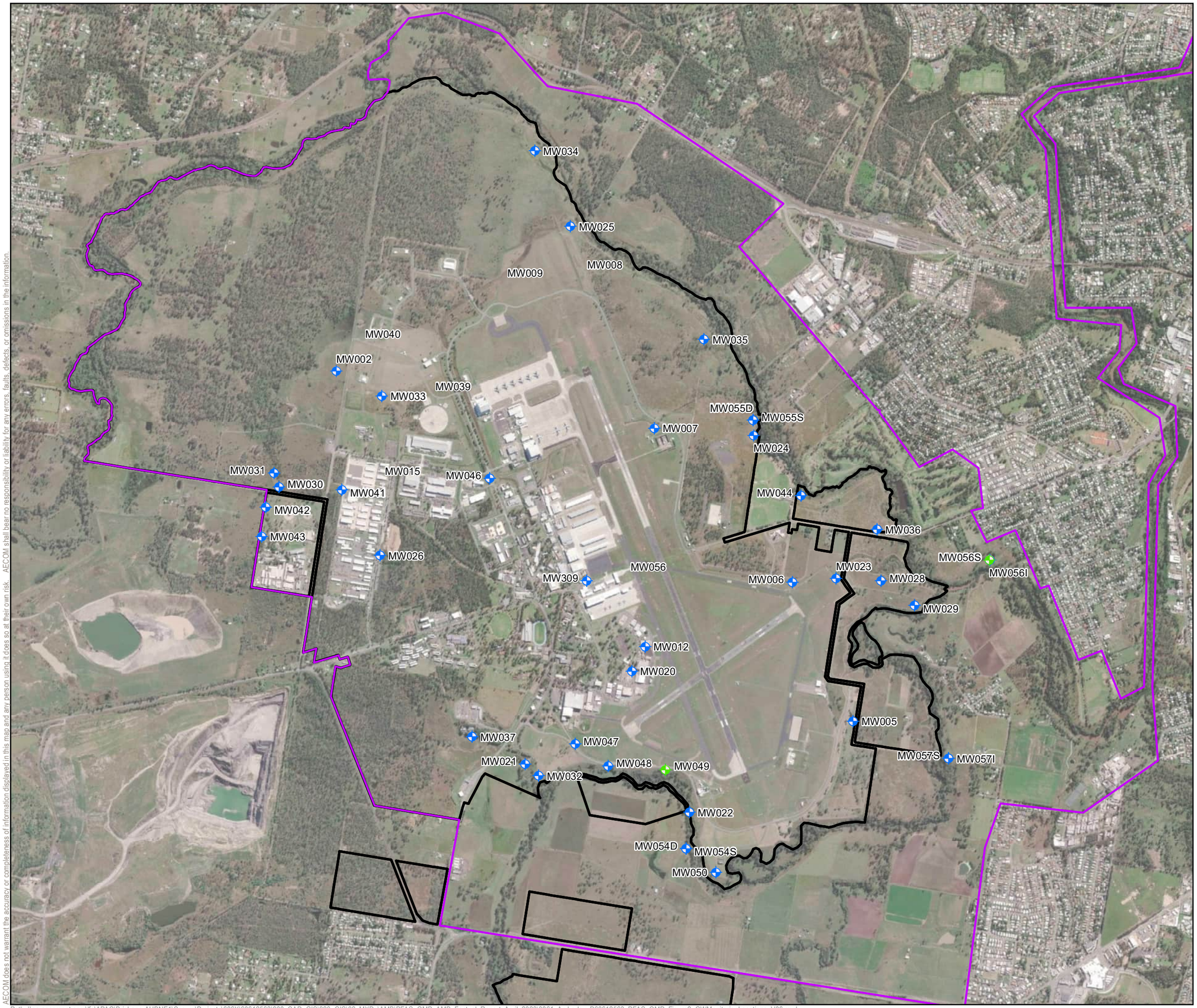

LEGEND

- Groundwater Monitoring Well (sampled)
- Groundwater Monitoring Well (not sampled)
- Management Area
- Base Boundary

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET -

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 2: Groundwater Monitoring Wells

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT,
FACTUAL REPORT: APRIL/MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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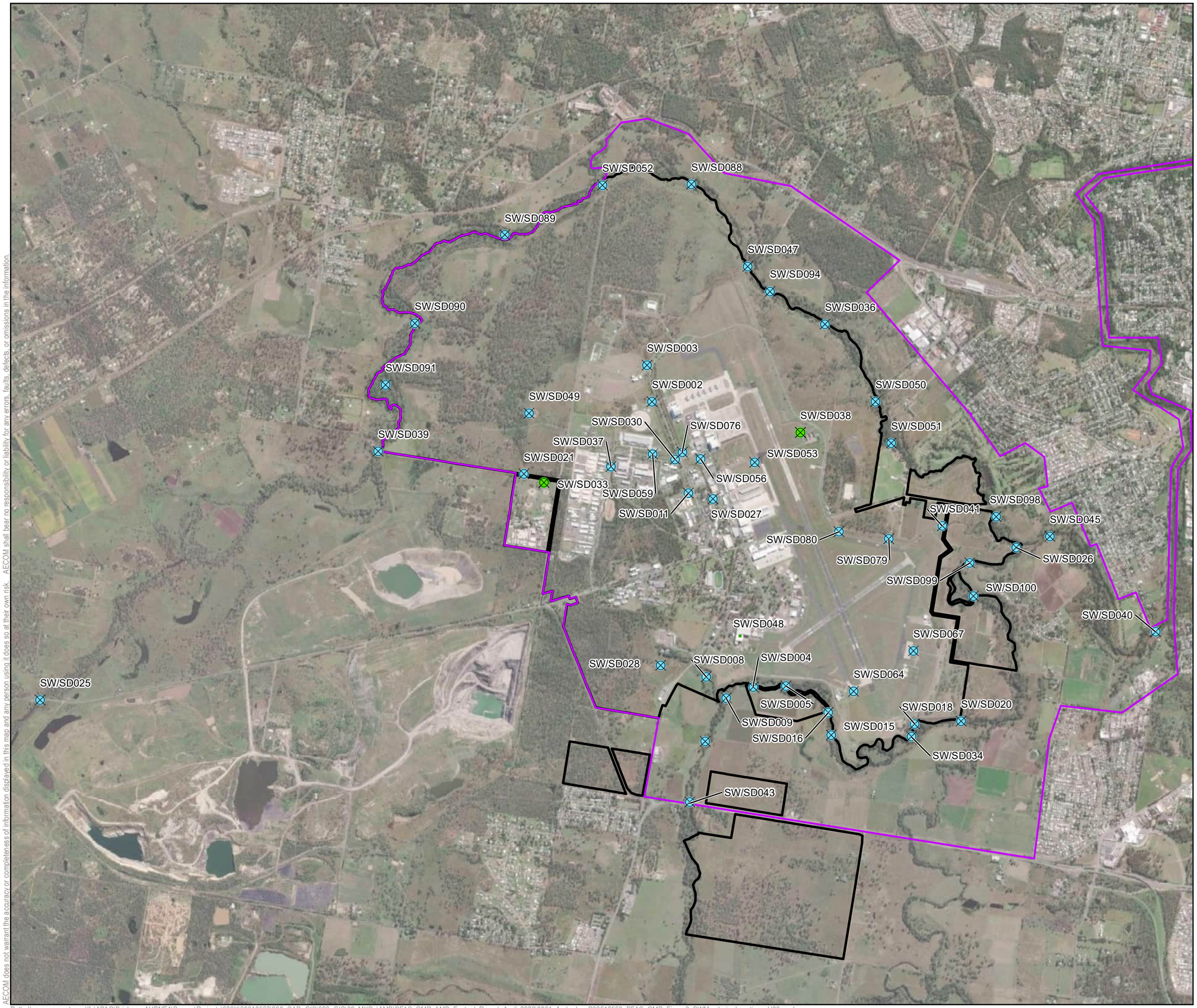

LEGEND

- Surface water and sediment sample collected
- Sediment sampled collected, surface water sample not collected
- Management Area
- Base Boundary

Samples from SW/SD018 were collected from the side of the drainage channel entering Warrill Creek. Consequently, the samples were re-named with new sample identification numbers, SW/SD304.

0 0.5 1 km

AECOM

SCALE 1:35,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 3: Surface Water and Sediment Sampling Locations

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT,
FACTUAL REPORT: APRIL/MAY 2023

CLIENT

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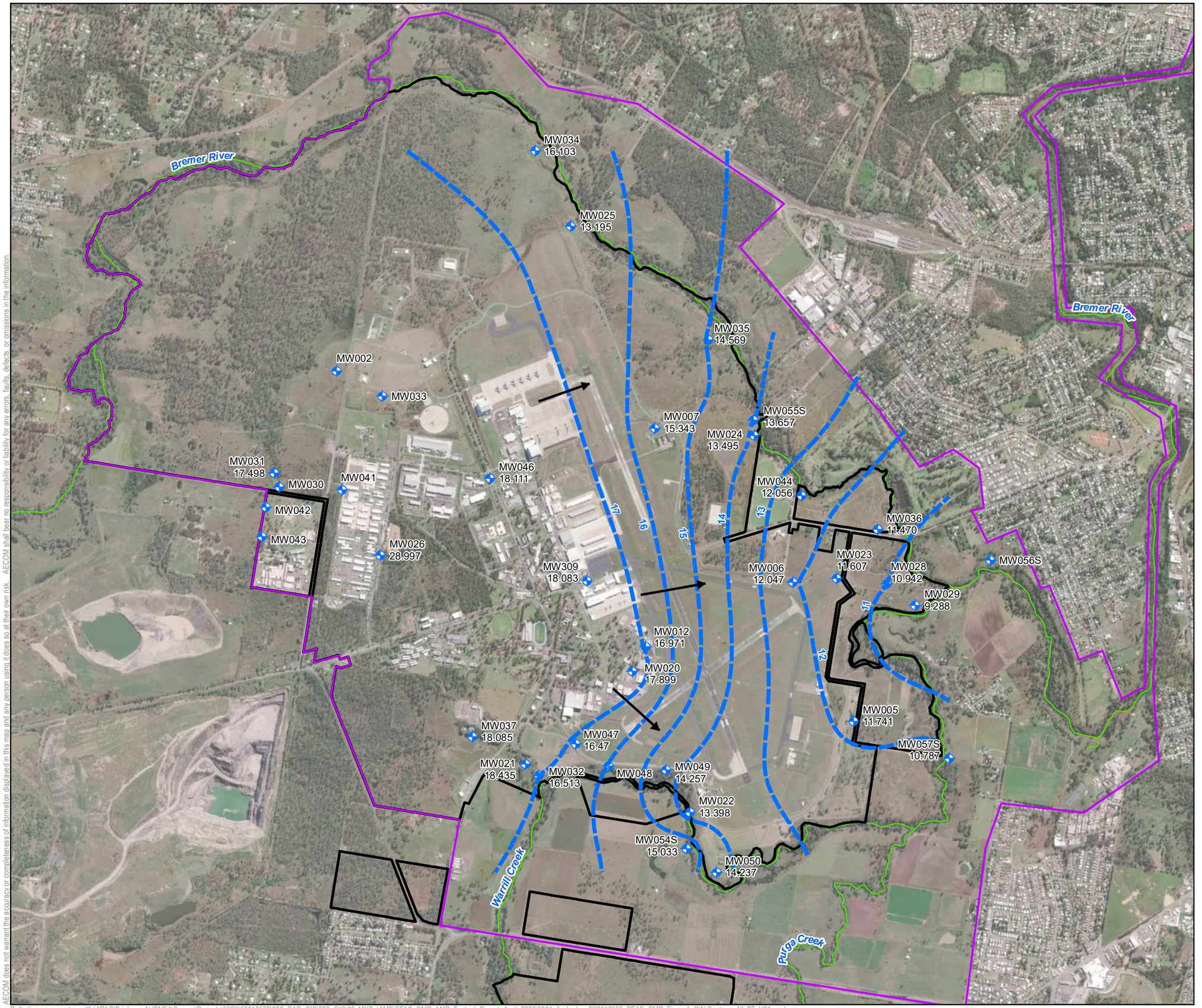

LEGEND

- Groundwater Monitoring Wells
- Management Area
- Base Boundary
- Groundwater Contours (mAHD)
- Groundwater flow direction

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 4: Inferred Groundwater Contours in the Alluvium / Tertiary Formation - April / May 2023

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT,
FACTUAL REPORT: APRIL/MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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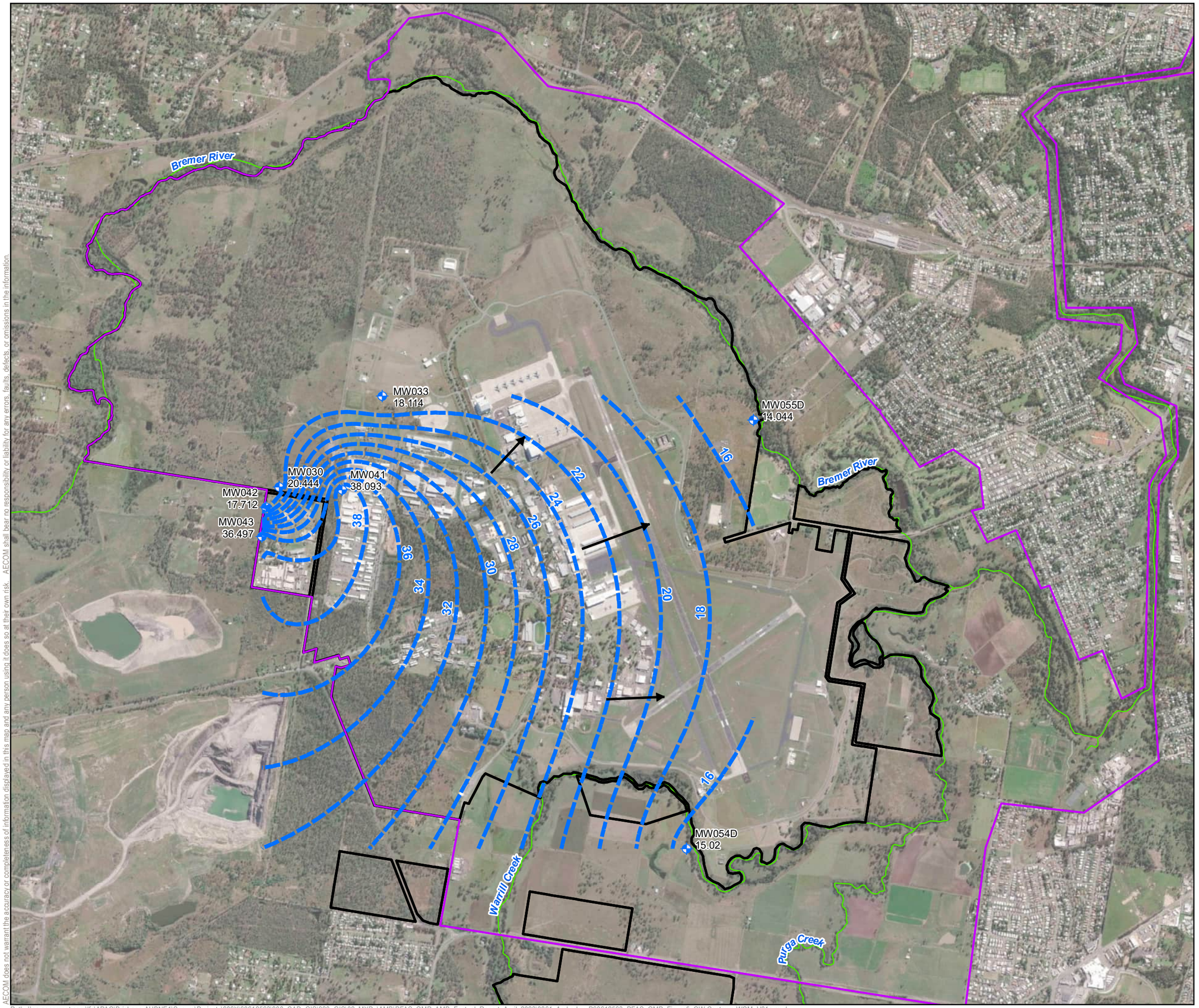

LEGEND

- Management Area
- Base Boundary
- Groundwater Contours (mAHD)
- Groundwater flow direction

N

0 0.5 1 km

AECOM

SCALE	1:26,000
SIZE	A3
SHEET	-
COORDINATE SYSTEM	GDA 1994 MGA Zone 56

TITLE

Figure 5: Inferred Groundwater Contours in the Walloon Coal Measures - April/May 2023

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT,
FACTUAL REPORT: APRIL / MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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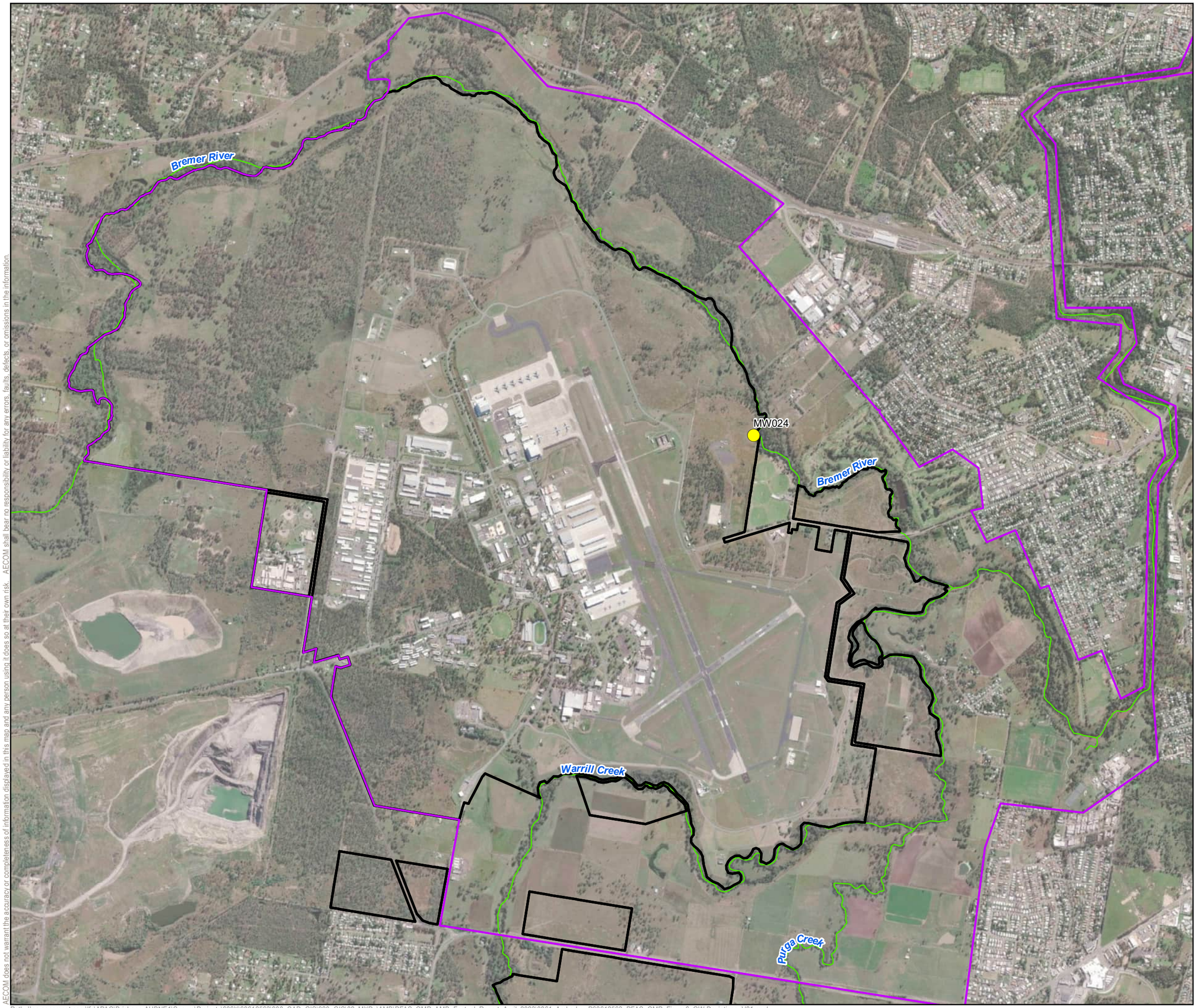

LEGEND

- Management Area
- Base Boundary
- Watercourses
- New exceedance of PFHxS+PFOS or PFOA

N

0 0.5 1 km

AECOM

SCALE 1:26,000

SIZE A3

SHEET

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 6: Groundwater Results – Deviations from Historical Data – April / May 2023

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY SAMPLING EVENT FACTUAL REPORT: APRIL / MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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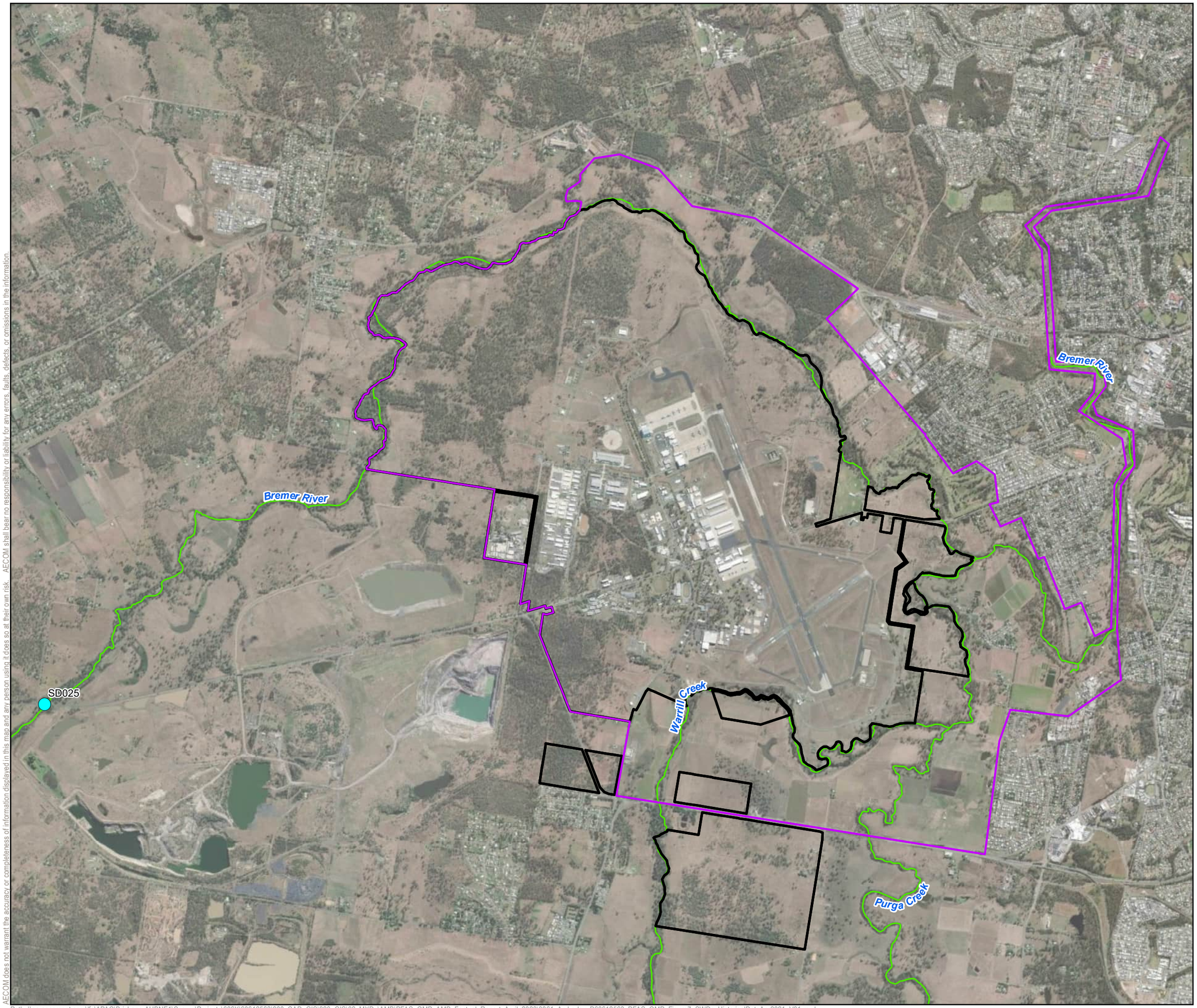

LEGEND

- Management Area
- Base Boundary
- Watercourses
- First-time detection of PFHxS+PFOS or PFOA

N

0 0.5 1 km

AECOM

SCALE 1:37,000

SIZE A3

SHEET -

COORDINATE SYSTEM GDA 1994 MGA Zone 56

TITLE

Figure 7: Sediment Results – Deviations from Historical Data – April / May 2023

PROJECT

PROJECT: PFAS OMP RAAF BASE AMBERLEY
SAMPLING EVENT,
FACTUAL REPORT: APRIL / MAY 2023

CLIENT

DEPARTMENT OF DEFENCE

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Appendix B

Tables

Appendix B Tables

Property ID	Well ID	Screen depth (m)	Hydrasleeve™ Install Date	Approximate Hydrasleeve™ Installation Depth (mbtoc)	Hydrasleeve™ Sample Date	Hydrasleeve™ Redeployed Post Sampling?	Aquifer	Well Depth (mbtoc)	Depth to Water (mbtoc)	TOC Elevation (mAHD)	Groundwater Elevation (mAHD)	Condition of Well	DO (mg/L)	EC (µS/cm)	pH	Er (mV)	Eh (mV)	Temp (°C)	Water Colour	Odour	Sheen	Sample Method / Comments
0861	MW002	16.7-23.7	26/10/2022	22.50	22/05/2023	Yes	Walloon Coal Measures	22.985	18.367	Unknown	Unknown	Good	1.9	15277	6.3	59.4	264.4	24.2	Cloudy, medium turbidity	No odour	No sheen	HydraSleeve™
0861	MW005	13.0-17.0	20/04/2023	16.00	21/04/2023	No	Alluvium	17.8	14.984	26.725	11.741	Good	1.2	983	6.77	86.2	291.2	23	Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW006	10.3-14.3	24/10/2022	12.30	26/04/2023	No	Alluvium	13.312	9.89	21.937	12.047	Good	2.14	1501	7.38	163.7	368.7	19.9	Pale brown, low turbidity	No odour	No sheen	HydraSleeve™
0861	MW007	6.0-10.0	18/04/2023	9.00	21/04/2023	No	Alluvium	10.755	7.865	23.208	15.343	Good	0.93	864	6.59	95.5	300.5	21.8	Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW012	12.5-17.5	21/10/2022	15.00	20/04/2023	No	Tertiary Formation	16.07	9.204	26.175	16.971	Good	0.93	990	6.6	89.2	294.2	23.2	Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW020	23.5-16.5	20/04/2023	15.00	21/04/2023	No	Tertiary Formation	16.215	9.144	27.043	17.899	Good	1.01	832	6.9	84	289	24.0	Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW021	2.5-6.0	27/04/2023	4.50	28/04/2023	No	Alluvium	5.715	2.285	20.72	18.435	Good	3.8	485	7.03	15.5	220.5	23.2	Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW022	4.0-9.0	18/10/2022	8.00	28/04/2023	No	Alluvium	9.70	6.252	19.65	13.398	Good	0.66	1036	6.53	22.6	227.6	23.1	Light brown, slightly turbid	No odour	No sheen	HydraSleeve™
0861	MW023	7.8-11.8	24/10/2022	11.00	26/04/2023	No	Alluvium	12.87	8.903	20.51	11.607	Good	-	4707	6.89	77.4	282.4	23.6	Pale brown, low turbidity	No odour	No sheen	HydraSleeve™
0861	MW024	7.0-11.0	18/04/2023	10.50	28/04/2023	No	Alluvium	11.91	7.455	20.95	13.495	Good	2.07	3140	7.25	-5.9	199.1	21	Clear, non-turbid	No odour	No sheen	Bailer
0861	MW025	7.4-11.4	18/04/2023	8.00	20/04/2023	No	Alluvium	9.072	12.225	25.42	13.195	Good	0.55	1261	7.27	79.2	284.2	23.5	Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW026	14.5-17.5	18/04/2023	16.00	20/04/2023	No	Tertiary Formation	17.205	11.243	40.24	28.997	Good	0.72	1645	5.85	125.2	330.2	24.3	Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW028	10.5-14.5	19/04/2023	12.50	20/04/2023	No	Alluvium	13.91	9.888	20.83	10.942	Good	0.5	821	6.49	91.6	296.6	20.1	Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW029	7.0-10.0	19/04/2023	9.00	20/04/2023	No	Alluvium	11.025	8.942	18.23	9.288	Good	0.48	620	6.84	93.3	298.3	21	Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW030	17.0-21.0	22/05/2023	19.00	23/05/2023	No	Walloon Coal Measures	20.342	15.455	35.84	20.385	Good	2.7	1062	6.75	162.4	367.4	19.6	Cloudy, high turbidity	No odour	No sheen	HydraSleeve™
0861	MW309	13.0-19.0	25/10/2022	18.00	20/04/2023	Yes	Tertiary Formation	19.288	10.524	28.607	18.083	Good	0.78	793	6.17	111.2	316.2	23.9	Light brown, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW031	14.5-20.5	26/04/2023	17.00	27/04/2023	No	Tertiary Formation	18.065	15.952	33.45	17.498	Good	-	4135	6.71	54.3	259.3	21.7	Pale brown	No odour	No sheen	Bailer
0861	MW032	8.0-14.0	20/04/2023	13.00	27/04/2023	No	Alluvium	14.645	9.767	26.28	16.513	Good	1.06	3280	7.07	-49.6	155.4	22.7	Pale brown	No odour	No sheen	HydraSleeve™
0861	MW033	29.0-33.0	22/05/2023	32.00	23/05/2023	No	Walloon Coal Measures	32.745	24.342	42.456	18.114	Good	3.6	4522	6.62	10.9	215.9	22	Cloudy, medium turbidity	Sulfuric odour	No sheen	HydraSleeve™
0861	MW034	5.0-10.0	27/04/2023	8.00	22/05/2023	No	Alluvium	8.763	8.202	24.305	16.103	Good	2.2	1159	5.91	174.5	379.5	22.4	Cloudy, medium turbidity	No odour	No sheen	HydraSleeve™
0861	MW035	8.0-13.5	19/10/2022	12.50	11/05/2023	No	Alluvium	13.5	10.43	24.999	14.569	Good	2.2	2841	6.29	157.6	362.6	21.1	Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW036	10.2-15.2	19/04/2023	14.00	20/04/2023	No	Alluvium	14.98	12.57	24.04	11.47	Good	1.2	923	7	84.9	289.9	22.1	Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW037	5.0-10.0	17/04/2023	9.00	20/04/2023	No	Alluvium	10.972	7.134	25.219	18.085	Good	1.1	782	6.44	82.5	287.5	18.3	Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW041	11.5-14.5	25/10/2022	10.00	19/04/2023	Yes	Walloon Coal Measures	11.141	8.29	46.383	38.093	Good	1.16	1977	6.91	40.1	245.1	28.5	Brown, medium turbidity	Organic odour	No sheen	HydraSleeve™
0861	MW042	24.0-30.0	25/10/2022	28.00	27/04/2023	Yes	Walloon Coal Measures	29.075	22.324	40.036	17.712	Damaged	0.62	1617	6.99	-65.4	139.6	23.4	Light brown	No odour	No sheen	HydraSleeve™
0861	MW043	18.0-21.0	25/10/2022	19.50	27/04/2023	Yes	Walloon Coal Measures	20.803	12.685	49.182	36.497	Good	0.79	3506	6.75	-98.3	106.7	23.9	Light brown	Organic odour	No sheen	HydraSleeve™
0861	MW044	8.0-11.0	26/10/2022	9.00	11/05/2023	Yes	Alluvium	10.08	8.255	20.311	12.056	Good	0.62	332	6.85	-90.6	114.4	23.5	Brown	Organic odour	No sheen	HydraSleeve™
0861	MW046	8.2-11.2	25/10/2022	10.00	17/04/2023	Yes	Tertiary Formation	11.072	7.89	26.001	18.111	Good	2.19	821	7.04	68.6	273.6	25.1	Light brown	Organic odour	No sheen	HydraSleeve™
0861	MW047	10.5-13.5	25/10/2022	12.00	20/04/2023	Yes	Tertiary Formation	13.182	9.795	26.265	16.47	Good	0.73	832	7.1	52.7	257.7	24.3	Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW048	7.5-10.5	25/10/2022	9.50	17/04/2023	Yes	Alluvium	10.245	8.32	23.108	14.788	Good	2.06	532	5.32	144.5	349.5	23.4	Light brown, low turbidity	No odour	No sheen	HydraSleeve™
0861	MW049	7.5-10.5	25/10/2022	9.00	Not found							Not found										Not found
0861	MW050	11.5-14.5	24/10/2022	13.30	17/04/2023	Yes	Alluvium	14.368	10.08	24.317	14.237	Damaged	1.11	410.4	6.13	96.3	301.3	25.1	Brown	No odour	No sheen	HydraSleeve™
0861	MW054D	18.0-21.0	09/11/2022	20.00	26/04/2023	Yes	Walloon Coal Measures	20.713	5.434	20.454	15.02	Good	0.13	361.9	6.8	29.7	234.7	22.9	Pale brown	No odour	No sheen	HydraSleeve™
0861	MW054S	4.0-7.0	09/11/2022	6.00	26/04/2023	Yes	Alluvium	6.895	5.347	20.38	15.033	Good	-	3522	6.93	45.8	250.8	23.8	Pale brown	No odour	No sheen	HydraSleeve™
0861	MW055D	28.0-34.0	20/10/2022	32.50	11/05/2023	Yes	Walloon Coal Measures	32.56	8.152	22.196	14.044	Good	0.81	5120	7.42	-83.8	121.2	22.4	Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW055S	9.0-12.0	20/10/2022	10.00	11/05/2023	Yes	Alluvium	10.49	8.483	22.14	13.657	Good	0.35	1205	6.72	-76.6	128.4	23.3	Clear, non-turbid	No odour	No sheen	HydraSleeve™
0861	MW056I	15.0-18.0	29/03/2022	17	18/04/2023	Yes	Tertiary Formation	18.8	6.032	14.762	8.73	Good	0.46	368	7.34	38.5	243.5	22	Light brown, low turbidity	Organic odour	No sheen	HydraSleeve™
0861	MW056S	6.5-9.5	Unable to access due to dense vegetation				Alluvium	Unable to access due to dense vegetation														
0861	MW057I	12.5-15.5	26/10/2022	14.50	19/04/2023	Yes	Tertiary Formation	15.442	5.672	16.494	10.822	Good	0.5	682	7.06	7.4	212.4	22.1	Pale brown, medium turbidity	No odour	No sheen	Hydrasleeve™
0861	MW057S	5.5-8.5	26/10/2022	7.00	19/04/2023	Yes	Alluvium	8.44	5.692	16.479	10.787	Good	0.5	1556	6.94	28.3	233.3	23.3	Pale brown, medium turbidity	No odour	No sheen	Hydrasleeve™

Notes
All Hydrasleeves™ were installed a minimum of 24 hours prior to sampling.
m - metres
mbtoc - metres below top of casing
mAHD - metres above Australian Height Datum
TOC - Top of Casing
DO - Dissolved Oxygen
EC - Electrical Conductivity
Er - Uncorrected Oxidation Reduction Potential
Eh - Corrected Oxidation Reduction Potential
` - no data
Er converted to Eh by adding 205 based on a YSI with Ag/AgCl sensor calibrated to a 3.5 molar KCL solution
mg/L - milligrams per litre
µS/cm - microsiemens per centimetre
mV - millivolts
°C - degrees Celcius

		Sum of PFHxS and PFOS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSE	EtFOSE	MeFOSA	EtFOSA	EtFOSAA	MeFOSAA	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.02	0.02	0.01	0.02	0.01	0.02	0.1	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.05	0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.01
PFAS NEMP (HEPA, 2020) Drinking Water		**0.07**											**0.56**																		
PFAS NEMP (HEPA, 2020) Freshwater 99%							*0.00023*						*19*																		
PFAS NEMP (HEPA, 2020) Freshwater 95%							***0.13***						***220***																		

Field ID	Location ID	Sampled Date	Lab ID	Sample Type																													
0861_MW002_230522	MW002	22/05/2023	EB2315514001	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0861_MW005_230421	MW005	21/04/2023	EB2312062065	Normal	**0.08**	<0.02	<0.02	0.05	<0.02	*0.03*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08
0861_MW006_230426	MW006	26/04/2023	EB2312761005	Normal	**55.2**	2.5	2.25	13.2	0.56	***42***	<0.05	1	2.44	5	0.77	**0.99**	0.06	<0.05	<0.05	<0.05	<0.05	<0.12	0.13	<0.12	<0.12	<0.12	<0.12	<0.05	<0.05	<0.05	0.55	<0.05	<0.05	<0.05	71.4
0861_MW007_230421	MW007	21/04/2023	EB2312062066	Normal	**22.2**	1.84	1.97	13.3	0.8	***8.88***	<0.02	0.4	0.67	2.85	0.46	**0.82**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	0.09	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	0.05	<0.05	<0.05	<0.05	32.1
0861_MW012_230421	MW012	21/04/2023	EB2312062069	Normal	0.06	<0.02	<0.02	0.02	<0.02	*0.04*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06
0861_MW020_230421	MW020	21/04/2023	EB2312062064	Normal	**134**	4.36	5.78	46.8	3.69	***87.1***	<0.1	2.1	7.27	12.1	4.19	**5.59**	0.64	<0.1	<0.1	<0.1	<0.1	<0.24	<0.1	<0.24	<0.24	<0.24	<0.24	<0.1	<0.1	<0.1	0.88	<0.1	<0.1	<0.1	180
0861_MW021_230428	MW021	28/04/2023	EB2312761033	Normal	**142**	2.42	4.75	48.9	2.2	***92.8***	<0.25	<1.2	1.15	5.75	1.5	**4.45**	<0.25	<0.25	<0.25	<0.25	<0.25	<0.62	<0.25	<0.62	<0.62	<0.62	<0.62	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	164
0861_QC106_230428	MW021	28/04/2023	EB2312761034	Field_D	**139**	2.34	4.85	48.2	2.51	***90.7***	<0.24	<1.2	1.05	5.71	1.63	**4.36**	<0.24	<0.24	<0.24	<0.24	<0.24	<0.61	<0.24	<0.61	<0.61	<0.61	<0.61	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	<0.24	161
0861_QC206_230428	MW021	28/04/2023	N23/008561	Interlab_D	**88**	1.5	2.7	30	2.3	***58***	<0.01	0.44	0.89	3.4	1	**2.4**	0.072	0.013	<0.01	<0.01	<0.02	<0.02	0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	0.052	0.053	<0.01	103
0861_MW022_230428	MW022	28/04/2023	EB2312761049	Normal	**8.95**	1.15	1.35	8.16	0.11	***0.79***	<0.03	0.5	0.27	1.18	0.18	0.25	<0.03	<0.03	<0.03	<0.03	<0.03	<0.06	<0.03	<0.06	<0.06	<0.06	<0.06	<0.03	<0.03	<0.05	<0.05	<0.05	<0.05	<0.05	13.9
0861_MW023_230426	MW023	26/04/2023	EB2312761021	Normal	**0.42**	0.06	0.05	0.26	<0.02	***0.16***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.53
0861_QC105_230426	MW023	26/04/2023	EB2312761015	Field_D	**0.42**	0.06	0.05	0.27	<0.02	***0.15***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.53
0861_QC205_230426	MW023	26/04/2023	N23/008562	Interlab_D	**0.34**	0.049	0.045	0.23	<0.01	***0.11***	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.43
0861_MW024_230428	MW024	28/04/2023	EB2312761031	Normal	**0.16**	<0.03	<0.02	0.09	<0.02	*0.07*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.16
0861_MW025_230420	MW025	20/04/2023	EB2312062052	Normal	**2.37**	0.27	0.26	1.34	0.06	***1.03***	<0.02	0.3	0.43	0.58	0.16	0.17	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	4.6
0861_MW026_230420	MW026	19/04/2023	EB2312062049	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01
0861_MW028_230420	MW028	19/04/2023	EB2312062046	Normal	**26.4**	1.46	2.28	10.2	1.43	***16.2***	<0.02	0.3	0.46	1.96	0.4	**0.84**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	35.5
0861_MW029_230420	MW029	19/04/2023	EB2312062050	Normal	**9.56**	0.71	0.94	5.27	0.38	***4.29***	<0.02	0.2	0.21	0.88	0.16	0.26	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	13.3
0861_MW030_230522	MW030	22/05/2023	EB2315514002	Normal	**12.9**	4.66	4.62	12.7	0.21	***0.24***	<0.02	1.2	1.88	9.86	1.76	**1.37**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	38.5
0861_MW031_230426	MW031	26/04/2023	EB2312761026	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01
0861_MW032_230427	MW032	27/04/2023	EB2312761006	Normal	**27.8**	1.59	1.53	7.86	0.87	***19.9***	<0.02	0.7	0.8	3.29	0.85	**1.86**	0.06	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.11	<0.05	<0.05	39.3
0861_MW033_230522	MW033	22/05/2023	EB2315514003	Normal	0.02	<0.02	<0.02	<0.01	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.02
0861_MW034_230522	MW034	22/05/2023	EB2315514004	Normal	0.07	<0.02	<0.02	<0.01	<0.02	*0.07*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.07
0861_MW035_230509	MW035	9/05/2023	EB2314270004	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01
0861_MW036_230420	MW036	19/04/2023	EB2312062048	Normal	0.03	<0.02	<0.02	0.02	<0.02	*0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.03
0861_MW037_230420	MW037	19/04/2023	EB2312062047	Normal	**6.82**	2.24	2.53	6.26	0.08	***0.56***	<0.02	0.2	0.41	1.83	0.27	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	14.5
0861_MW041_230419	MW041	19/04/2023	EB2312062039	Normal	<0.02	<0.02	<0.02	<0.02	<0.02	*<0.05*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01
0861_MW042_230427	MW042	27/04/2023	EB2312761003	Normal	0.07	<0.02	<0.02	0.02	<0.02	*0.05*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.07
0861_MW043_230427	MW043	27/04/2023	EB2312761004	Normal	**0.7**	0.2	0.07	0.3	<0.02	***0.4***	<0.02	<0.1	0.05	0.1	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	1.14
0861_MW044_230511	MW044	11/05/2023	EB2314270003	Normal	0.04	<0.02	<0.02	0.02	<0.02	*0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.04
0861_MW046_230417	MW046	17/04/2023	EB2312062010	Normal	**121**	4.42	4.85	34.2	3.78	***87.1***	<0.25	5.5	12.5	16.9	3.9	**7.75**	0.25	<0.25	<0.25	<0.25	<0.25	<0.62	<0.25	<0.62	<0.62	<0.62	<0.62	<0.25	<0.25	<0.25	13.9	0.8	<0.25	196
0861_MW047_230420	MW047	19/04/2023	EB2312062045	Normal	**10.8**	1.03	1.28	6.55	0.43	***4.24***	<0.02	0.4	0.6	1.44	0.15	0.32	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	16.4
0861_MW048_230417	MW048	17/04/2023	EB2312062007	Normal	**8.63**	0.39	0.45	2.97	0.16	***5.66***	<0.02	<0.1	0.14	0.45	0.08	0.12	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	10.4
0861_MW050_230417	MW050	17/04/2023	EB2312062008	Normal	**0.35**	0.04	0.02	0.13	<0.02	***0.22***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.41
0861_QC100_230417	MW050	17/04/2023	EB2312062013	Field_D	**0.34**	0.04	0.02	0.12	<0.02	***0.22***	<0.02	<0.1	<0.02	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.42
0861_QC200_230417	MW050	17/04/2023	N23/008175	Interlab_D	**0.24**	0.028	0.014	0.084	<0.01	***0.16***	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.29
0861_MW054D_230426	MW054D	26/04/2023	EB2312770002	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.02*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01
0861_MW054S_230426	MW054S	26/04/2023	EB2312770001	Normal	**0.35**	<0.04	0.02	0.16	<0.02	***0.19***	<0.02	<0.1	<0.02	<0.02	<0.02	0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.38
0861_MW055D_230511	MW055D	11/05/2023	EB2314270006	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01
0861_MW055S_230511	MW055S	11/05/2023	EB2314270005	Normal	**0.48**	0.06	0.05	0.3	<0.02	***0.18***	<0.02	<0.1	<0.02	0.05	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.66
0861_MW056I_230418	MW056I	18/04/2023	EB2312057013	Normal	0.01	<0.02	<0.02	0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	0.01
0861_MW057I_230419	MW057I	19/04/2023	EB2312057012	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01
0861_MW057S_230419	MW057S	19/04/2023	EB2312057011	Normal	**1.25**	0.28	0.21	0.97	0.02	***0.28***	<0.02	0.1	0.04	0.19	0.03	0.06	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	2.18
0861_QC103_230419	MW057S	19/04/2023	EB2312062042	Field_D	**1.2**	0.29	0.25	0.9	0.03	***0.3***	<0.02	<0.1	0.04	0.15	0.04	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	2.07
0861_QC203_230419	MW057S	19/04/2023	N23/008179	Interlab_D	**0.98**	0.25	0.18	0.81	<0.01	***0.17***	<0.01	0.093	0.031	0.15	0.024	0.039	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	1.75
0861_MW309_230420	MW309	20/04/2023	EB2312062051	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01
0861_QC104_230420	MW309	20/04/2023	EB2312062053	Field_D	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.01
0861_QC204_230420	MW309	20/04/2023	N23/008180	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.01	*<0.02*	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

LOR is limit of reporting
µg/L is micrograms per litre
'-' denotes no analysis undertaken
'<' denotes concentration is less than
NEMP is National Environmental Mangement Plan
HEPA is Heads of Environmental Protection Agencies
Denotes first time detection above LOR
Denotes new exceedance of human health guideline values
Note that a concentration equal to the assessment criterion is not considered an exceedance.

Property ID	Location ID	Sample Date	Location	DO (mg/L)	EC (µS/cm)	pH	Er (mV)	Eh (mV)	Temp (°C)	Description	Odour	Sheen	Comments
0861	SW002	18/04/2023	Drain	1.18	137.4	6.97	33.6	238.6	23.5	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW003	18/04/2023	Drain	3.32	246	6.72	43.1	248.1	23.7	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW004	28/04/2023	Warrill Creek	1.13	641	7.71	16.4	221.4	20.3	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW005	28/04/2023	Warrill Creek	0.58	208.7	7.1	29.4	234.4	21.6	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW008	28/04/2023	Drain	0.75	1045	7.38	-28.3	176.7	24.1	Clear, non-turbid	No odour	No sheen	Grab sample
0861	SW009	28/04/2023	Warrill Creek	-	640	6.8	15.2	220.2	21.2	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW011	17/04/2023	Drain	2.97	702	7.06	71.3	276.3	27.4	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW015	26/04/2023	Warrill Creek	1.28	709	7.73	24.6	229.6	20.3	Light brown, slightly turbid	Organic odour	No sheen	Grab sample
0861	SW016	28/04/2023	Warrill Creek	0.27	688	7.62	7.6	212.6	20.4	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW020	28/04/2023	Warrill Creek	-	631	7.64	32.1	237.1	20.2	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW021	26/04/2023	Drain	-	322.5	9.49	33.4	238.4	21.2	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW025	26/04/2023	Bremer River	-	1774	8	61.8	266.8	21	Light brown, slightly turbid	Organic odour	No sheen	Grab sample
0861	SW026	19/04/2023	Warrill Creek	0.87	662	7.41	40	245	21.8	Light brown, slightly turbid	Organic odour	No sheen	Grab sample
0861	SW027	17/04/2023	Drain	0.97	524.1	7.04	70.3	275.3	23	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW028	9/04/2023	Drain	1.23	642	6.95	25.3	230.3	21.3	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW030	17/04/2023	Drain	1.36	202	7.4	44.2	249.2	24.6	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW033	27/04/2023	Drain	Dry									
0861	SW034	28/04/2023	Warrill Creek	-	458	7.97	22.4	227.4	20.4	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW036	22/05/2023	Bremer River	2.8	321.6	6.03	152.8	357.8	13.1	Clear, slightly turbidity	No odour	No sheen	Grab sample
0861	SW037	18/04/2023	Drain	0.85	503	6.55	56.9	261.9	21	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW038	21/04/2023	Drain	Dry									
0861	SW039	26/04/2023	Bremer River	-	1768	8.17	60.8	265.8	19.5	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW040	18/04/2023	Bremer River	0.74	670	6.93	30.6	235.6	21.4	Light brown, slightly turbid	Organic odour	No sheen	Grab sample
0861	SW041	18/04/2023	Drain	0.37	266.2	7.12	32.4	237.4	29.2	Light brown, slightly turbid	No odour	Slight sheen	Grab sample
0861	SW043	19/04/2023	Warrill Creek	0.96	576	7	25.2	230.2	22.1	Light brown, slightly turbid	Organic odour	No sheen	Grab sample
0861	SW045	18/04/2023	Bremer River	0.82	586	7.07	33.3	238.3	21.7	Light brown, slightly turbid	Organic odour	No sheen	Grab sample
0861	SW047	22/05/2023	Bremer River	6.3	1430	6.55	149.2	354.2	14.9	Clear, slightly turbidity	No odour	No sheen	Grab sample
0861	SW048	27/04/2023	Drain	2.53	467.9	7.96	92.6	297.6	20.6	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW049	26/04/2023	Drain	-	196.9	7.34	29.7	234.7	22.7	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW050	11/05/2023	Bremer River	1.44	253	7.08	48.2	253.2	23.5	Clear, slightly turbidity	No odour	No sheen	Grab sample
0861	SW051	19/04/2023	Bremer River	0.98	1017	7.15	252.5	457.5	20.5	Light brown, slightly turbid	Organic odour	No sheen	Grab sample
0861	SW052	26/04/2023	Bremer River	-	550	7.56	8.2	213.2	20.9	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW053	21/04/2023	Drain	0.88	506	7.02	76.1	281.1	22.3	Light brown, slightly turbid	Organic odour	No sheen	Grab sample
0861	SW056	18/04/2023	Drain	0.39	202.6	7.11	31.1	236.1	25.4	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW059	17/04/2023	Drain	1.09	513	6.98	59.6	264.6	24.9	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW064	21/04/2023	Drain	0.9	732	7.61	48.2	253.2	20	Light brown, slightly turbid	Organic odour	No sheen	Grab sample
0861	SW067	21/04/2023	Drain	0.78	683	7.08	57.2	262.2	20.1	Light brown, slightly turbid	Organic odour	No sheen	Grab sample
0861	SW076	18/04/2023	Drain	0.51	377.5	6.99	38.5	243.5	23.5	Light brown, slightly turbid	No odour	No sheen	Grab sample
0861	SW079	21/04/2023	Drain	0.87	826.3	8.07	73.7	278.7	17.8	Light brown, slightly turbid	Organic odour	No sheen	Grab sample
0861	SW080	21/04/2023	Drain	0.96	492.7	6.99	72.3	277.3	20	Light brown, slightly turbid	Organic odour	No sheen	Grab sample
0861	SW088	22/05/2023	Bremer River	2.2	1439	6.03	238.4	443.4	13.9	Clear, medium turbidity	No odour	No sheen	Grab sample
0861	SW089	22/05/2023	Bremer River	8.4	1455	6.29	38.1	243.1	13.6	Clear, medium turbidity	No odour	No sheen	Grab sample
0861	SW090	22/05/2023	Bremer River	-	267.2	5.17	45.1	250.1	18	Clear, slightly turbidity	No odour	No sheen	Grab sample
0861	SW091	22/05/2023	Bremer River	7.23	1545	6.55	159.2	364.2	13.8	Clear, slightly turbidity	No odour	No sheen	Grab sample
0861	SW094	22/05/2023	Bremer River	6	1239	6.9	147.6	352.6	16.5	Clear, slightly turbidity	No odour	No sheen	Grab sample
0861	SW098	18/04/2023	Bremer River	0.97	969	7.27	39.5	244.5	20.5	Light brown, slightly turbid	Organic odour	No sheen	Grab sample
0861	SW099	18/04/2023	Warrill Creek	1.08	622	7.61	26.5	231.5	20.4	Light brown, slightly turbid	Organic odour	No sheen	Grab sample
0861	SW100	19/04/2023	Warrill Creek	0.62	274.7	7.74	32.9	237.9	19.4	Light brown, slightly turbid	Organic odour	No sheen	Grab sample
0861	SW304*	28/04/2023	Drain entering Warrill Creek	1.01	657	7.61	38.1	243.1	21.2	Light brown, slightly turbid	No odour	No sheen	Grab sample

Notes
DO - Dissolved Oxygen
EC - Electrical Conductivity
Er - Uncorrected Oxidation Reduction Potential
Eh - Corrected Oxidation Reduction Potential
` - no data
Er converted to Eh by adding 205 based on a YSI with Ag/AgCl sensor calibrated to a 3.5 molar KCL solution
mg/L - milligrams per litre
µS/cm - microsiemens per centimetre
mV - millivolts
°C - degrees Celcius
* SW018 was renamed SW304.

		Sum of PFOS and PFHxS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSE	EtFOSE	MeFOSA	EtFOSA	EtFOSAA	MeFOSAA	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR	0.01	0.02	0.02	0.01	0.02	0.01	0.02	0.1	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.05	0.02	0.05	0.05	0.05	0.05	0.02	0.02	0.05	0.05	0.05	0.05	0.01
PFAS NEMP (HEPA, 2020) Recreational Water		**2.00**											10																		
PFAS NEMP (HEPA, 2020) Freshwater 99%							*0.00023*						*19*																		
PFAS NEMP (HEPA, 2020) Freshwater 95%							***0.13***						***220***																		

Field ID	Location ID	Sampled Date	Lab ID	Sample Type																												
0861_SW002_230418	SW002	18/04/2023	EB2312062025	Normal	0.48	0.03	0.03	0.15	<0.02	***0.33***	<0.02	<0.1	0.17	0.12	0.05	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.91
0861_SW003_230418	SW003	18/04/2023	EB2312062028	Normal	**2.31**	0.16	0.13	0.84	0.05	***1.47***	<0.02	<0.1	0.2	0.33	0.08	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.36
0861_SW004_230428	SW004	28/04/2023	EB2312761039	Normal	0.05	<0.02	<0.02	0.02	<0.02	***0.03***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05
0861_SW005_230428	SW005	28/04/2023	EB2312761042	Normal	**17.6**	1.53	1.11	6.22	0.27	***11.4***	<0.02	0.5	0.53	1.41	0.13	0.25	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	23.4
0861_SW008_230427	SW008	27/04/2023	EB2312761023	Normal	1.44	0.14	0.08	0.51	0.03	***0.93***	<0.02	<0.1	0.13	0.23	0.04	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.05	<0.05	<0.05	2.21
0861_SW009_230428	SW009	28/04/2023	EB2312761038	Normal	0.06	<0.02	<0.02	0.02	<0.02	***0.04***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06
0861_SW011_230417	SW011	17/04/2023	EB2312062006	Normal	**9.72**	0.28	0.31	3.15	0.16	***6.57***	<0.02	0.1	0.21	0.62	0.1	0.16	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	11.7
0861_SW015_230426	SW015	26/04/2023	EB2312761010	Normal	0.05	<0.02	<0.02	0.01	<0.02	***0.04***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05
0861_SW016_230428	SW016	28/04/2023	EB2312761046	Normal	0.06	<0.02	<0.02	0.02	<0.02	***0.04***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06
0861_SW020_230428	SW020	28/04/2023	EB2312761035	Normal	0.08	<0.02	<0.02	0.03	<0.02	***0.05***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.08
0861_SW021_230426	SW021	26/04/2023	EB2312761001	Normal	**20.7**	1.96	1.74	8.68	0.38	***12***	<0.02	1.4	1.87	3.07	0.49	0.82	0.09	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	32.5
0861_SW025_230426	SW025	26/04/2023	EB2312761012	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0861_SW026_230419	SW026	19/04/2023	EB2312057009	Normal	0.13	<0.02	<0.02	0.04	<0.02	***0.09***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13
0861_SW027_230417	SW027	17/04/2023	EB2312062009	Normal	1.03	0.03	0.03	0.26	<0.02	***0.77***	<0.02	<0.1	0.02	0.07	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.2
0861_SW028_230509	SW028	9/05/2023	EB2314270001	Normal	0.43	0.03	<0.02	0.13	<0.02	***0.3***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.46
0861_SW030_230417	SW030	17/04/2023	EB2312062011	Normal	**3.87**	0.16	0.16	1.35	0.09	***2.52***	<0.02	0.1	0.31	0.43	0.11	0.13	0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.37	<0.05	<0.05	5.75
0861_SW034_230428	SW034	28/04/2023	EB2312761044	Normal	0.06	<0.02	<0.02	0.02	<0.02	***0.04***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.06
0861_SW036_230522	SW036	22/05/2023	EB2315514005	Normal	0.01	<0.02	<0.02	<0.01	<0.02	***0.01***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.01
0861_SW037_230418	SW037	18/04/2023	EB2312062027	Normal	**4.3**	0.54	0.52	2.57	0.13	***1.73***	<0.02	<0.1	0.24	0.69	0.13	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	6.7
0861_SW039_230426	SW039	26/04/2023	EB2312761008	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0861_SW040_230418	SW040	18/04/2023	EB2312057008	Normal	0.15	<0.02	<0.02	0.05	<0.02	***0.1***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15
0861_SW041_230418	SW041	18/04/2023	EB2312062029	Normal	**16.9**	0.98	1.18	8.04	0.55	***8.88***	<0.04	0.3	0.4	1.47	0.25	0.45	<0.04	<0.04	<0.04	<0.04	<0.04	<0.1	<0.04	<0.1	<0.1	<0.1	<0.1	<0.04	<0.04	<0.05	<0.05	<0.05	<0.05	22.5
0861_SW043_230419	SW043	19/04/2023	EB2312057010	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0861_SW045_230418	SW045	18/04/2023	EB2312057007	Normal	0.09	<0.02	<0.02	0.04	<0.02	***0.05***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.09
0861_SW047_230522	SW047	22/05/2023	EB2315514007	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0861_SW048_230427	SW048	27/04/2023	EB2312761014	Normal	**3.62**	0.1	0.11	0.96	0.08	***2.66***	<0.02	<0.1	0.09	0.29	0.05	0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.31	<0.05	<0.05	4.75
0861_SW049_230426	SW049	26/04/2023	EB2312761030	Normal	1.5	0.09	0.07	0.44	0.03	***1.06***	<0.02	<0.1	0.07	0.19	0.03	0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	2.05
0861_SW050_230511	SW050	11/05/2023	EB2314270007	Normal	0.22	<0.02	<0.02	0.11	<0.02	***0.11***	<0.02	<0.1	<0.02	0.04	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.26
0861_SW051_230419	SW051	19/04/2023	EB2312062040	Normal	0.13	<0.02	<0.02	0.04	<0.02	***0.09***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.13
0861_SW052_230426	SW052	26/04/2023	EB2312761028	Normal	0.03	<0.02	<0.02	0.01	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.03
0861_SW053_230421	SW053	21/04/2023	EB2312062072	Normal	0.05	<0.02	<0.02	0.03	<0.02	***0.02***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.05
0861_SW056_230418	SW056	18/04/2023	EB2312062030	Normal	**2.2**	0.17	0.14	0.8	0.04	***1.4***	<0.02	<0.1	0.16	0.27	0.06	0.08	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	3.12
0861_SW059_230417	SW059	17/04/2023	EB2312062012	Normal	**4.94**	0.44	0.38	2.28	0.1	***2.66***	<0.02	0.3	0.68	0.89	0.16	0.23	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	8.12
0861_QC101_230417	SW059	17/04/2023	EB2312062014	Field_D	**4.78**	0.39	0.39	2.19	0.1	***2.59***	<0.02	0.3	0.62	0.86	0.18	0.22	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	7.84
0861_QC201_230417	SW059	17/04/2023	N23/008176	Interlab_D	**3.8**	0.35	0.28	1.8	0.052	***2***	<0.01	0.27	0.45	0.67	0.15	0.15	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	6.17
0861_SW064_230421	SW064	21/04/2023	EB2312062073	Normal	1.27	0.18	0.12	0.62	0.02	***0.65***	<0.02	<0.1	<0.04	0.11	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	1.72
0861_SW067_230421	SW067	21/04/2023	EB2312062071	Normal	**40.1**	6.04	5.02	27.6	0.82	***12.5***	<0.05	3.6	4.03	6.23	0.51	0.56	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.12	<0.12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	66.9
0861_SW076_230418	SW076	18/04/2023	EB2312062026	Normal	**3.76**	0.39	0.34	1.83	0.1	***1.93***	<0.02	0.2	0.46	0.78	0.18	0.24	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.2	<0.05	<0.05	6.65
0861_QC103_230418	SW076	18/04/2023	EB2312062032	Field_D	**3.74**	0.45	0.34	1.76	0.09	***1.98***	<0.02	0.2	0.5	0.81	0.17	0.26	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	0.17	<0.05	<0.05	6.73
0861_QC203_230418	SW076	18/04/2023	N23/008178	Interlab_D	**3.3**	0.3	0.27	1.8	0.059	***1.5***	<0.01	0.21	0.41	0.64	0.15	0.18	0.011	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	0.16	<0.01	<0.01	5.69
0861_SW079_230421	SW079	21/04/2023	EB2312062074	Normal	**16.8**	1.09	1.15	8.47	0.48	***8.34***	<0.02	0.2	0.51	1.7	0.27	0.43	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	22.6
0861_SW080_230421	SW080	21/04/2023	EB2312062070	Normal	**45.9**	2.62	2.98	22	1.32	***23.9***	<0.05	0.5	1.16	4.24	0.69	1.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.12	<0.05	<0.12	<0.12	<0.12	<0.12	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	60.6
0861_SW088_230522	SW088	22/05/2023	EB2315514011	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0861_SW089_230522	SW089	22/05/2023	EB2315514013	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0861_SW090_230522	SW090	22/05/2023	EB2315514015	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0861_QC112_230522	SW090	22/05/2023	EB2315514022	Field_D	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0861_QC212_230522	SW090	22/05/2023	N23/010677	Interlab_D	<0.01	<0.01	<0.01	<0.01	<0.01	*<0.02*	<0.01	<0.05	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
0861_SW091_230522	SW091	22/05/2023	EB2315514017	Normal	<0.01	<0.02	<0.02	<0.01	<0.02	*<0.01*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0861_SW094_230522	SW094	22/05/2023	EB2315514019	Normal	0.21	<0.02	<0.02	0.08	<0.02	***0.13***	<0.02	<0.1	0.02	0.03	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.26
0861_SW098_230418	SW098	18/04/2023	EB2312057006	Normal	0.17	<0.02	<0.02	0.05	<0.02	***0.12***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.17
0861_QC102_230418	SW098	18/04/2023	EB2312062031	Field_D	0.15	<0.02	<0.02	0.04	<0.02	***0.11***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.15
0861_QC202_230418	SW098	18/04/2023	N23/008177	Interlab_D	0.11	<0.01	<0.01	0.033	<0.01	***0.077***	<0.01	<0.05	<0.02	0.011	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.02	<0.01	<0.05	<0.05	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.11
0861_SW099_230419	SW099	19/04/2023	EB2312062038	Normal	<0.02	<0.02	<0.02	<0.02	<0.02	*<0.05*	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	<0.01
0861_SW100_230419	SW100	19/04/2023	EB2312062041	Normal	0.28	0.04	<0.02	0.14	<0.02	***0.14***	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	0.32
0861_SW304_230428*	SW304	28/04/2023	EB2312761047	Normal	**16.1**	1.62	1.38	7.66	0.3	**8.47**	<0.02	0.6	0.68	1.47	0.12	0.15	<0.02	<0.02	<0.02	<0.02	<0.02	<0.06	<0.02	<0.06	<0.06	<0.06	<0.06	<0.02	<0.02	<0.05	<0.05	<0.05	<0.05	22.4

Notes:
LOR is limit of reporting
µg/L is micrograms per litre
'-' denotes no analysis undertaken
'<' denotes concentration is less than
NEMP is National Environmental Mangement Plan
HEPA is Heads of Environmental Protection Agencies
Denotes first time detection above LOR
Denotes new exceedance of human health guideline values
Note that a concentration equal to the assessment criterion is not considered an exceedance.
* SW018 was renamed SW304.

Location ID	Sample Date	Location	Sample Description	Odour	Notes on River Conditions
SD002	18/04/2023	Drain	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Manmade drainage channel around 10m width, running west to east. Water is shallow, ~0.1m depth, pooled, clear with bright green algae and aquatic plants. Long grass in channel. Sediment slug to the east of the culvert.
SD003	18/04/2023	Drain	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Wide and deep drainage channel, draining north west from the airstrip. Around 40m width and 10m depth. Steep eroded bank to the south west. Heavily vegetated channel with grass, reeds and trees. Reenforced north east bank with large angular boulders.
SD004	28/04/2023	Warrill Creek	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Abundant woody debris in river channel. Eroded southern bank. Brown, flowing water, around 0.5m depth. Flowing west to east. Evidence of flooding (stacked debris).
SD005	28/04/2023	Warrill Creek	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Brown, flowing water (west to east). Appears to be around 0.5m maximum depth. Clear, brown water with fish present. Established riparian vegetation on north bank. Steep eroded southern bank with no riparian vegetation, followed by grassed floodplain to the south. Woody debris within river channel.
SD008	28/04/2023	Drain	Clay, dark grey with organic matter.	Organic odour	Still, pooled water with gently sloping grassed banks. Reeds and grass within channel. Flows west to east. Maximum 1m depth. Maximum 5m width.
SD009	28/04/2023	Warrill Creek	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Flowing, west to east, slightly cloudy, brown water. Around 1m depth, and around 10m width. Vegetated sediment island within creek with established trees and grasses. Woody debris within channel. Fish present. Southern bank issteep and eroded with no vegetation. North bank
SD011	17/04/2023	Drain	Clay,dark grey, fine to medium sub angular gravel, low plasticity.	Organic odour	Shallow, slowly flowing drainage channel. <40cm maximum depth. No riparian vegetation. Grassed banks. Cobble reenforcement of banks. Aquatic plants in drain.
SD015	26/04/2023	Warrill Creek	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Gently flowing west to east. Slightly cloudy water. ~0.3m depth. Heavily vegetated on north bank with established trees and native grasses. Gently sloping north bank. South bank is steep with visible erosion and less vegetation.
SD016	28/04/2023	Warrill Creek	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Still, clear water, brown in colour. Established riparian vegetation on north bank. Woody debris within channel. Fish observed in creek. Rubbish filled embankment ~20m north consists of concrete slabs, construction material, steel debris.
SD020	28/04/2023	Warrill Creek	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Clear, still water. Heavily vegetated riparian banks to the north and south. Water gently flowing west to east. Water depth maximum 0.3m. Evidence of flooding (debris in trees).
SD021	26/04/2023	Drain	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Shallow, pooled, still water around 0.2m maximum depth. Thick grass and vegetation surrounding sample location.
SD025	26/04/2023	Bremer River	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Still pooled water. Flow direction south to north evidenced by debris build up. Black water with small aquatic surface water plants. Depth >1m, width ~20m. Sparcely vegetated banks. Gradual sloping banks (<10°), with steep drop at waters edge.
SD026	19/04/2023	Bremer River	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Still, pooled, deep water. Very narrow channel, around 2m width. Heavily vegetated banks with native grasses and well established trees. Steep banks. Woody debris within and across the channel. Flow direction south to north.
SD027	17/04/2023	Drain	Clay,dark grey, fine to medium sub angular gravel, low plasticity.	Organic odour	Heavily modified creek bed. Vegetated with reeds and trees. Flow direction east to west. Manmade cobble embankment to the south. Grassed, eroding bank to the north.
SD028	9/04/2023	Frogs Hollow Gully	Clay, dark brown, some mottling.	Organic odour	Pooled water channel with aquatic plants on the surface. Fish and tadpoles present. Long grass surrounding the channel (~1m high). No riparian vegetation. Relatively flat catchment (<5°) surrounding the channel. Water is black. Unable to see the bottom. Channel is ~ 2m width, and around 0.5m maximum depth. Appears to flow west to east.
SD030	17/04/2023	Drain	Silty Clay, light brown, low plasticity with some sand.	Organic odour	Drain beside road. Flat land surrounding. Manmade banks. No riparian vegetation. Grassed mown banks.
SD033	27/04/2023	Drain	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Gently flowing east to west. Man made channel capturing runoff from training area and release from new water treatment tanks. Ponds immediatley adjacent to the south. Currently empty. Channel bed contains large angular cobbles and reenforcement wire.
SD034	28/04/2023	Warrill Creek	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Still brown water ~0.3m depth. Heavily vegetated riparian zones on both banks. Native grasses within channel. Rubbish observed in northern bank, including porcelain, glass, and rubber. Narrow drainage channel entering creek from the north to south at sample location.
SD036	22/05/2023	Bremer River	Clay, dark grey, slightly sandy with organic matter.	No odour	Pooled deep water in channel. Unable to see the bottom. Large established gums and trees in channel. Aquatic plants covering entire surface. Western bank vegetated with grass and trees. Eastern bank is gently sloping, vegetated with native grasses. Channel is within a regeneration area.
SD037	18/04/2023	Drain	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Minimal water <0.1m depth. Still, pooled, and stagnant water. Very shallow drainage channel with mown grassed banks. Tall reeds around 2m high within channel.
SD038	21/04/2023	Drain	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Still poolled water >1m depth, ~3m width. Appears to flow west to east (based on the gradient of the land). Large fish observed. Man made embankments with large angular cobble bank reenforcement. Water is clear with a brown/green colour. Aquatic plants on surface. Reeds on banks. Surrounded by open, mown, grassed area.
SD039	26/04/2023	Bremer River	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Still pooled water beneath bridge. <0.2m depth. Large subangular boulders and cobbles within channel. Creek bed is vegetated with reeds and grasses and well established trees. Flow direction is S to N evidenced by woody debris within the creek.
SD040	18/04/2023	Bremer River	Gravelly silt, dark grey, with fine to coarse subangular gravel.	Organic odour	Large, deep, still dam, with brown coloured water. Around 20m width. Depth >1m. Heavily vegetated banks on both sides. Well established trees and native grasses on both gently sloping banks. Vegetated bank around 50m width on north side. Drainage channel entering the dam from the NW. Sample taken around 2m upstream of drainage channel.
SD041	18/04/2023	Drain	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Clear, black, pooled, still water. Maximum 0.3m depth. Channel is heavily vegetated with tall reeds. Large angular boulders within channel.
SD043	19/04/2023	Warrill Creek	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Clear, flowing creek. Flowing south to north. Erosion channels on eastern bank beneath the bridge. Black cracking clays. Banks are well vegetated. Channel is around 5m width.
SD045	18/04/2023	Bremer River	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Still, clear, brown water, flowing west to east. Small aquatic plants on surface. Well vegetated banks on both sides with native grasses and trees.Gently sloping banks with a steep drop off next to sampling point. Woody debris along banks.
SD047	22/05/2023	Bremer River	Clay, dark grey, slightly sandy with organic matter.	No odour	Deep pooled water. Very steep bank on the western side. Channel around 40m width. Vegetated island with well established gums and trees within the river channel.
SD048	27/04/2023	Drain	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Drainage leads from hangar to the north ~40m. Land slopes to the south west. Mowed grassed area.
SD049	26/04/2023	Drain	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Large dam at the bottom of a grassy slope. Around 100m diameter. Deep, still, brown water. Aquatic reeds surrounding the banks. Ducks and fish present. Slopes gently from the east to the west.
SD050	11/05/2023	Bremer River	Clay, dark grey, low plasticity.	Organic odour	Manmade drainage channel around 10m width, running W to E. Water is still and shallow. Around 0.2m depth. Banks are gently sloping and stabilised with large angular boulders. Aquatic plants within channel.
SD051	19/04/2023	Bremer River	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Deep pooled, still water. Flow direction N to S evidenced by flood debris in trees. Very steep embankment. Channel around 5m width. Green scum covering entire surface. Woody debris within channel. Overland flow across embankments evident with rubbish (corrugated iron) running W to E. Heavily vegetated banks with native grasses, reeds, and trees.
SD052	26/04/2023	Bremer River	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Still, pooled, deep water. Narrow channel is around 3m width. Entire surface is covered with small aquatic plants. Woody debris in channel. Banks are heavily vegetated. Flow direction is W to E evidenced by flood debris in trees. Very steep banks.
SD053	21/04/2023	Drain	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Manmade drainage channel surrounding the runway. Water flowing south to north. Very shallow. Concrete base with 4 drains entering
SD056	18/04/2023	Drain	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Flat surrounding land. Very gently sloping banks. Channel is around 2m maximum width. Depth around 0.2m max. Grassed mown banks. Reeds and aquatic plants within channel. Still, pooled water.
SD059	17/04/2023	Drain	Silty Clay, light brown, low plasticity with some sand.	Organic odour	Still pooled water >1m depth, ~3m width. Appears to flow west to east (based on the gradient of the land). Large fish observed. Man made embankments with large angular cobble bank reenforcement. Water is clear with a brown/green colour. Aquatic plants on surface. Reeds on banks. Surrounded by open, mown, grassed area. H37
SD064	21/04/2023	Drain	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Very shallow, narrow drainage channel bordering the runway. Mown grassed area surrounding sample location.
SD067	21/04/2023	Drain	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Small drainage channel. Concrete culvert contains dark green water. Culvert is covered with a grill. Very shallow channel. Mown grassed banks. Dry during visit.
SD076	18/04/2023	Drain	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Flat surrounding land. Very shallow banks. Channel is around 10m width. Very shallow water flowing E to W (~10cm). Channel vegetated with reeds around 1.5m high
SD079	21/04/2023	Drain	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Manmade drainage channel bordering the runway. 2m high reeds in channel. Very tall reeds in channel. Green and brown algae in channel. No flow. Shallow. Around 0.2m depth. Very gently sloping mown grassed banks.
SD080	21/04/2023	Drain	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Manmade drainage channel bordering the runway. 2m high reeds in channel. Sediment build up on the southern side of the culvert. Very gently sloping mown grassed banks.
SD088	22/05/2023	Bremer River	Clay, dark grey with organic matter.	No odour	Deep, wide channel. Entire surface is covered with small aquatic plants. Gently sloping vegetated banks. Woody debris within channel. Flow direction is west to east.
SD089	22/05/2023	Bremer River	Clay, dark grey, slightly sandy with organic matter.	No odour	Still, pooled, shallow water. Entire surface is covered with small aquatic plants. Woody debris across channel. Fallen trees across the banks. Flow direction is south to north evidenced by flood debris in trees. Very steep banks.
SD090	22/05/2023	Bremer River	Clay, dark grey, slightly sandy with organic matter.	No odour	Still, pooled, deep water. Channel is around 3m width. Entire surface is covered with small aquatic plants. Woody debris in channel. Banks are heavily vegetated. Flow direction is south to north evidenced by flood debris in trees. Very steep banks.
SD091	22/05/2023	Bremer River	Clay, dark grey, slightly sandy with organic matter.	No odour	Still, pooled, clear water. Small aquatic plants on surface. Woody debris within creek channel. Fallen trees across channel. Channel around 3m width. Water around 0.3m depth. Heavily vegetated banks. Banks are fenced off for regeneration. Flow direction is south to north evidenced by flood debris in trees. Very steep banks.
SD094	22/05/2023	Bremer River	Clay, dark grey with organic matter.	No odour	Shallow, pooled water in creek channel. Not flowing, clear, brown. Large woody debris within channel. Vegetated banks. Steep easterly bank, gently sloping on the west. Western bank is a revegetation area. Flow direction is north to south, evidenced by flood debris within the channel. Drainage channel entering the creek from the northwest to southeast. Heavily eroded.
SD098	18/04/2023	Bremer River	Silty Clay, dark grey wth organic matter.	Organic odour	Still pooled water beneath bridge. ~0.5m depth. Clear, with a brown colour. Water flow north to south evidenced by debris build up within creek. Film of white/green substance on water surface. Geofab on embankments. Vegetated banks on both sides with native grass and trees.
SD099	18/04/2023	Warrill Creek	Silty Clay, light brown, low plasticity with some sand.	Organic odour	Deep, wide channel. Brown, turbid water. Gently flowing south to north. Woody debris along banks. Grassed bank to the west. Vegetated with well established trees to the east.
SD100	19/04/2023	Warrill Creek	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Deep, narrow channel, gently flowing east to west. Clear, green/brown colour. Flood debris in trees and on banks. Very steep north bank. Long grass and vegetation on south bank.
SD304	28/04/2023	Drain entering Warrill Creek	Silty Clay, dark grey, low plasticity with some fine grained sand.	Organic odour	Clear, gently flowing water W to E. Approximately 0.3m depth. Wood debris in river channel. Large angular cobbles in channel (~30 cm). Well vegetated on both banks. Creek bed contains native grass vegetation. Lots of rubbish observed, including bottles, concrete, metal, and asbestos. Construction rubble in creek channel.

	Sum of PFOS and PFHxS	PFBS	PFPeS	PFHxS	PFHpS	PFOS	PFDS	PFBA	PFPeA	PFHxA	PFHpA	PFOA	PFNA	PFDA	PFUnDA	PFDoDA	PFTrDA	PFTeDA	FOSA	MeFOSE	EtFOSE	MeFOSA	EtFOSA	MFOSAA	EtFOSAA	4:2 FTS	6:2 FtS	8:2 FTS	10:2 FTS	Sum of PFAS	Moisture Content
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%
LOR	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.001	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0005	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.0002	0.0005	0.0005	0.0005	0.0005	0.0002	0.1

Location ID	Sample ID	Sample Date	Lab Report No.	Sample Type																												
SD002	0861_SD002_230418	18/04/2023	EB2312062018	Normal	0.0139	<0.0002	<0.0002	0.0006	<0.0002	0.0133	0.0003	<0.001	0.0004	0.0004	<0.0002	<0.0002	0.0003	0.0005	0.0007	0.0008	0.0003	<0.0005	<0.0002	<0.0005	<0.0005	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0176	33.3
SD003	0861_SD003_230418	18/04/2023	EB2312062022	Normal	0.0295	0.0002	0.0002	0.0027	0.0003	0.0268	0.0004	<0.001	0.0003	0.0004	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	0.0006	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0323	46.9
SD004	0861_SD004_230428	28/04/2023	EB2312761040	Normal	0.0084	<0.0002	<0.0002	<0.0004	<0.0002	0.0084	<0.107	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	0.0089	64.5
SD005	0861_SD005_230428	28/04/2023	EB2312761041	Normal	0.353	0.0014	<0.001	0.0181	<0.0022	0.335	<0.0034	<0.005	<0.001	0.0029	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0024	0.0238	<0.0024	<0.0024	<0.0024	<0.0024	<0.001	<0.001	<0.001	<0.001	<0.001	0.381	66.3
SD008	0861_SD008_230428	28/04/2023	EB2312761032	Normal	0.262	<0.001	<0.0012	0.0122	<0.002	0.25	<0.0066	<0.001	0.0011	0.0028	0.001	0.0026	0.0005	0.0015	0.0015	0.0035	0.0008	<0.0006	0.0029	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	0.0006	0.0013	<0.0005	0.282	89.8
SD011	0861_SD011_230417	17/04/2023	EB2312062002	Normal	0.004	<0.0002	<0.0002	0.0009	<0.0002	0.0031	<0.0002	<0.001	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0042	20.6
SD015	0861_SD015_230426	26/04/2023	EB2312761009	Normal	0.0062	<0.0002	<0.0002	0.0005	<0.0002	0.0057	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0062	37.2
SD016	0861_SD016_230428	28/04/2023	EB2312761045	Normal	0.0045	<0.0002	<0.0002	<0.0004	<0.0014	0.0045	<0.0032	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0045	47.8
SD020	0861_SD020_230428	28/04/2023	EB2312761036	Normal	0.0006	<0.0005	<0.0005	0.0006	<0.0005	<0.009	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0013	<0.0005	<0.0013	<0.0013	<0.0013	<0.0013	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	56.8
SD021	0861_SD021_230426	26/04/2023	EB2312761002	Normal	0.0511	0.0011	0.001	0.0065	0.0005	0.0446	0.0028	<0.001	0.0007	0.0018	0.0003	0.0007	<0.0002	<0.0002	0.0004	0.0003	0.0004	<0.0005	0.0004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0615	28
SD025	0861_SD025_230426	26/04/2023	EB2312761011	Normal	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0005	10.4
SD025	0861_QC109_230426	26/04/2023	EB2312761016	Field_D	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0003	11.5
SD025	0861_QC209_230426	26/04/2023	N23/008563	Interlab_D	<0.0002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.001	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002	<0.0002	-
SD026	0861_SD026_230419	19/04/2023	EB2312057001	Normal	0.0055	<0.0002	<0.0002	0.0002	<0.0002	0.0053	0.0005	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.006	42.7
SD027	0861_SD027_230417	17/04/2023	EB2312062001	Normal	0.0051	<0.0002	<0.0002	0.0004	<0.0002	0.0047	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0006	<0.0005	<0.0005	0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0056	28.7
SD028	0861_SD028_230509	9/05/2023	EB2314270002	Normal	0.013	<0.0002	<0.0002	0.0006	<0.0002	0.0124	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.013	41.3
SD030	0861_SD030_230417	17/04/2023	EB2312062003	Normal	0.0101	<0.0002	<0.0002	0.0012	<0.0002	0.0089	<0.0002	<0.001	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0105	28.1
SD033	0861_SD033_230427	27/04/2023	EB2312761022	Normal	0.573	0.0057	0.0119	0.105	0.0063	0.468	<0.0176	<0.005	0.0067	0.0174	0.0033	0.0115	<0.001	<0.001	0.0025	0.0033	0.0023	<0.0025	0.0182	<0.0025	<0.0025	<0.0025	<0.0025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.662	20
SD034	0861_SD034_230428	28/04/2023	EB2312761043	Normal	0.0753	0.0006	0.0007	0.006	0.0005	0.0693	<0.0002	<0.001	0.0003	0.0008	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0782	38.6
SD036	0861_SD036_230522	22/05/2023	EB2315514006	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0014	<0.0012	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	43.3
SD037	0861_SD037_230418	18/04/2023	EB2312062019	Normal	0.18	0.0054	0.0044	0.0338	0.0025	0.146	0.002	<0.001	0.0037	0.0089	0.0018	0.0027	0.0005	0.001	0.0006	0.0017	<0.0012	0.0007	0.0004	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.216	88.7
SD038	0861_SD038_230420	21/04/2023	EB2312062056	Normal	0.0008	<0.0002	<0.0002	<0.0002	<0.0002	0.0008	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0008	5.1
SD039	0861_SD039_230426	26/04/2023	EB2312761007	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	37.6
SD040	0861_SD040_230418	18/04/2023	EB2312057002	Normal	0.0035	<0.0002	<0.0002	0.0003	<0.0002	0.0032	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0035	27
SD041	0861_SD041_230418	18/04/2023	EB2312062020	Normal	1.8	0.0098	0.0217	0.18	0.0296	1.62	0.0128	<0.024	<0.0049	0.0168	<0.0049	0.0177	<0.0049	<0.0049	<0.0049	0.0054	<0.0049	<0.0122	0.0054	<0.0122	<0.0122	<0.0122	<0.0122	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	1.92	90.1
SD043	0861_SD043_230419	19/04/2023	EB2312057003	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	35.5
SD045	0861_SD045_230418	18/04/2023	EB2312057004	Normal	0.0084	<0.0002	<0.0002	0.0002	<0.0002	0.0082	0.0013	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0006	<0.0002	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.01	48.3
SD047	0861_SD047_230522	22/05/2023	EB2315514008	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.001	<0.042	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	57.3
SD048	0861_SD048_230427	27/04/2023	EB2312761013	Normal	0.153	0.0006	0.0011	0.0159	0.0025	0.137	<0.0016	<0.001	0.0009	0.0022	0.0006	0.0011	0.0008	<0.001	0.0016	0.0024	0.0024	0.0014	0.0031	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	0.0032	0.0007	<0.0005	0.178	48.3
SD049	0861_SD049_230426	26/04/2023	EB2312761029	Normal	0.0639	0.0002	0.0002	0.0035	0.0005	0.0604	<0.0002	<0.001	<0.0002	0.0004	<0.0002	0.0007	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0659	61.6
SD050	0861_SD050_230511	11/05/2023	EB2314270008	Normal	0.0197	<0.0002	<0.0002	0.0021	<0.0002	0.0176	<0.0002	<0.001	<0.0002	0.0002	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0005	0.0016	<0.0005	<0.0005	<0.0012	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0215	56.9
SD051	0861_SD051_230419	19/04/2023	EB2312062036	Normal	0.0047	<0.0002	<0.0002	<0.0002	<0.0002	0.0047	0.0004	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.006	37
SD052	0861_SD052_230426	26/04/2023	EB2312761027	Normal	0.0015	<0.0002	<0.0002	<0.0002	<0.0002	0.0015	<0.0002	<0.001	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.002	40.8
SD053	0861_SD053_230420	21/04/2023	EB2312062057	Normal	0.0242	<0.0002	0.0003	0.0023	0.0003	0.0219	<0.0002	<0.001	<0.0002	0.0003	<0.0002	0.0003	<0.0002	0.0002	<0.0002	0.0003	0.0003	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0262	76.9
SD056	0861_SD056_230418	18/04/2023	EB2312062021	Normal	0.187	0.0015	0.0016	0.0188	0.0023	0.168	0.003	<0.001	0.0021	0.0036	0.0012	0.0023	0.0004	0.0006	0.0025	0.0042	0.0009	0.0007	0.0069	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.221	73.8
SD059	0861_SD059_230417	17/04/2023	EB2312062004	Normal	0.0106	0.0002	0.0002	0.0015	<0.0002	0.0091	<0.0002	<0.001	0.0005	0.0008	0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0006	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0128	46.3
SD059	0861_QC107_230417	17/04/2023	EB2312062005	Field_D	0.0411	0.0006	0.0004	0.0046	0.0004	0.0365	0.0011	<0.001	0.0009	0.0013	0.0004	0.0007	<0.0002	<0.0002	<0.0002	0.0005	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0474	48
SD059	0861_QC207_230417	17/04/2023	RN1393124	Interlab_D	0.039	<0.001	<0.001	0.004	<0.001	0.035	<0.001	<0.002	<0.002	0.0017	<0.001	<0.001	<0.001	<0.001	<0.002	<0.005	<0.002	<0.002	<0.001	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002	0.0407	-
SD064	0861_SD064_230420	21/04/2023	EB2312062059	Normal	0.205	0.0016	0.0013	0.0148	0.0017	0.19	0.0031	<0.001	0.0013	0.0019	0.0003	0.0011	<0.0002	0.0006	0.0005	0.0004	<0.0002	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.219	71.3
SD067	0861_SD067_230420	21/04/2023	EB2312062060	Normal	0.386	0.0079	0.0079	0.0658	0.0052	0.32	0.0071	<0.002	0.0037	0.0085	0.0006	0.0016	0.0005	0.0006	0.0013	0.0022	0.001	<0.0012	0.0023	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.436	57.1
SD076	0861_SD076_230418	18/04/2023	EB2312062017	Normal	0.0407	0.0004	0.0003	0.0048	0.0006	0.0359	0.0002	<0.001	0.0007	0.0008	0.0003	0.0005	0.0002	0.0003	0.0005	0.0009	0.0006	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.047	49.1
SD079	0861_SD079_230420	21/04/2023	EB2312062058	Normal	1.94	0.0201	0.0248	0.236	0.0308	1.7	0.0179	0.006	0.0107	0.0368	0.0056	0.018	<0.0016	0.0024	0.0056	0.0096	0.0026	<0.0025	0.0094	<0.0025	<0.0025	<0.0025	<0.0025	<0.001	<0.001	<0.001	<0.001	0.0038	<0.0014	2.14	94.7
SD080	0861_SD080_230420	21/04/2023	EB2312062061	Normal	0.131	0.0021	0.0022	0.0199	0.0022	0.111	0.0014	<0.001	0.0008	0.0035	0.0005	0.0013	<0.0002	0.0002	<0.0004	0.001	0.0009	0.0007	0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.149	45.4
SD088	0861_SD088_230522	22/05/2023	EB2315514012	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0006	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	38.3
SD089	0861_SD089_230522	22/05/2023	EB2315514014	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0016	<0.0042	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	44.3
SD090	0861_SD090_230522	22/05/2023	EB2315514016	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.004	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	52.8
SD090	0861_QC111_230522	22/05/2023	EB2315514021	Field_D	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0014	<0.0006	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	45.1
SD090	0861_QC211_230522	22/05/2023	N23/010678	Interlab_D	<0.0002	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	<0.001	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002	<0.0002	-
SD091	0861_SD091_230522	22/05/2023	EB2315514018	Normal	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0018	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	34.8
SD094	0861_SD094_230522	22/05/2023	EB2315514020	Normal	0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0048	<0.0016	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0002	43
SD098	0861_SD098_230418	18/04/2023	EB2312057005	Normal	0.001	<0.0002	<0.0002	<0.0002	<0.0002	0.001	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.001	25.8
SD098	0861_QC108_230418	18/04/2023	EB2312062023	Field_D	0.0007	<0.0002	<0.0002	<0.0002	<0.0002	0.0007	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0007	23.7
SD098	0861_QC208_230418	18/04/2023	EB2312062024	Field_D	0.0006	<0.0002	<0.0002	<0.0002	<0.0002	0.0006	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0005	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	22.1
SD099	0861_SD099_230419	19/04/2023	EB2312062035	Normal	0.0047	<0.0002	<0.0002	0.0003	<0.0002	0.0044	<0.0002	<0.001	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.0002	<0.0006	<0.0002	<0.0006	<0.0006	<0.0006	<0.0006	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.0047	37.6
SD100	0861_SD100_230419	19/04/2023	EB2312062037	Normal	0.0014	<0.0002	<0.0002	0.0014	<0.0012	<0.0177	<0.0012	<0.001	0.0002	0.0003	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0031	<0.0012	<0.0031	<0.0031	<0.0031	<0.0031	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	0.0019	80.1
SD304*	0861_SD304_230428	28/04/2023	EB2312761048	Normal	0.0074	<0.0005	<0.0005	<0.0005	<0.0005	0.0074	<0.0005	<0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0012	<0.0005	<0.0012	<0.0012	<0.0012	<0.0012	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0074	52.9
SD304*	0861_QC110_230428	28/04/2023	EB2312761050	Field_D	0.19	0.0015	0.0015	0.0155	<0.0026	0.174	<0.0024	<0.001	0.0006	0.0019	<0.0002	0.0006	<0.0002	<0.0002	<0.0002	<0.0004	<0.0002	<0.0005	0.004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0005	<0.0005	<0.0005	<0.0005	0.2	57.6
SD304*	0861_QC210_230428	28/04/2023	N23/008564	Interlab_D	0.223	0.0017	0.0017	0.013	<0.001	0.21	0.0024	<0.002	<0.002	0.0018	<0.001	<0.001	<0.001	<0.001	<0.002	<0.002	<0.002	<0.002	0.0019	<0.005	<0.005	<0.002	<0.002	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002	0.2325	-

Notes:
LOR is limit of reporting
mg/kg is milograms per kilogram
'-' denotes no analysis undertaken
'<' denotes concentration is less than
Denotes first time detection above LOR
Denotes new exceedance of human health guideline values
* SD018 was renamed SD304.

Appendix C

Analytical Data Validation

Appendix C Analytical Data Validation

DATA VALIDATION REPORT

Project No.:	60612563	**Validation by:** AA	**Date:** 06/06/2023
Client:	Department of Defence		
Site:	Royal Australian Airforce Base, Amberley		
Matrix type:	Groundwater, surface water, sediment	**Data verified by:** JP	**Date:** 06/06/2023
No. of primary samples:	38 groundwater, 47 surface water, 49 sediment		
Laboratory:	ALS (Brisbane), NMI (Sydney)	**Project Manager:** JP	
Lab reference:	EB2312057, EB2312062, EB2312761, EB2312770, EB2314270, EB2315514, RN1393124, RN1393133, RN1394931		

Key Issues:	With one exception, no key QA/QC issues were identified in the field or laboratory datasets that could have a material implication on data interpretation and therefore decision-making on the project. The data are considered appropriate for use to meet the project objectives.

Field QA/QC

Sampling personnel	Sampling was conducted by AECOM environmental scientists between 17 April and 23 May 2023.
Sampling Methodology	Samples were collected using appropriate methods as identified within the main body of the report and as presented in the SAQP. Field parameters were measured using a water quality meter prior to sample collection. The probe on the water quality meter was decontaminated prior to use.
Chain of Custody	COC documents were completed as per AECOM procedures.
Rinsate Blank	Rinsate blank samples were collected at a frequency of one per day of sampling where appropriate (12 in total) during the monitoring between 17 April to 23 May 2023. Rinsate blank samples were collected from the decontaminated interface probe. Concentrations reported below the LOR for all analytes tested except for one sample, QC300, collected on 17 April 2023 where PFOS was detected (0.02 µg/L) marginally above the limit of reporting. See **Table C1**. The result is potentially a false positive. No first-time detections of PFOS were recorded during the sampling event.
Field Blanks	Field blank samples were collected at a frequency of one per day of sampling (12 in total between 17 April and 23 May 2023) by filling sample containers with laboratory supplied deionised water in the field. All field blanks reported concentrations below the LOR for the analytes tested. See **Table C1**.
Trip Blanks	Trip blank samples were present during the transport of samples collected between 17 April and 28 April 2023 for the primary laboratory samples. Trip blanks were present in four batches including two soil trip blanks and two water blanks. All concentrations were reported below the LOR, see **Table C1** (water) and **Table C2** (soil). The number of blanks analysed is lower than the target frequency in the SAQP (one per batch). This was because no trip blanks were available during the follow up visits to complete the sampling between 9-11 May and 22-23 May 2023. This minor non-compliance is not expected to impact data quality as PFAS are not volatile compounds and are unlikely to volatise during sample transport.
Frequency of field QC	Field duplicate (inter-laboratory duplicates) and triplicates (inter-laboratory duplicates) were collected. There were nine duplicates/triplicate sets for water samples (inclusive of groundwater and surface water samples) and five duplicates/triplicate sets for

	sediment samples (see **Tables C3, C4** and **C5**). The frequency of field QC achieves the expected frequency for each media type. The target frequency of one in ten primary samples was achieved for all matrices.
Handling and preservation	Primary, duplicate and triplicate samples were received preserved and chilled at the laboratory. All samples were received at the laboratory in appropriate sample containers with no sample container non-compliances noted.
Laboratory QA/QC	
Tests requested/reported	Samples were analysed and reported as requested on the COC.
Holding time compliance	Samples were extracted and analysed within recommended holding times.
Laboratory Accreditation	The laboratory analysis was conducted by ALS Environmental Pty Ltd (Brisbane) a National Association of Testing Authorities (NATA) accredited laboratory. The triplicate samples were analysed at the National Measurement Institute (NMI) (Sydney), also a NATA accredited laboratory.
Frequency of laboratory QC	The laboratory reported a sufficient frequency of quality control samples to assess whether the results have been reported to an acceptable accuracy and precision, except for the following: Laboratory duplicates below expected rate of 10% for PFAS in the following batches: • EB2312057 (5.6%) 18 samples in batch • EB2312062 (3.6%) 56 samples in batch • EB2312761 (5.3%) 38 samples in batch • EB2312770 (0.0%) 14 samples in batch • EB2315514 (0.0%) 17 samples in batch Matrix spikes below expected rate of 5% for PFAS in the following batches: • EB2312057 (0.0%) 18 samples in batch • EB2312062 (1.8%) 56 samples in batch • EB2312761 (2.63%) 38 samples in batch • EB2312770 (0.0%) 14 samples in batch • EB2315514 (0.0%) 17 samples in batch The reason for insufficient matrix spikes and laboratory duplicates for these batches is due to the way the laboratory assigns the duplicates and matrix spikes and the availability of additional bottles. The laboratory LIMS assigns laboratory QC to samples in the analytical run; however, the runs may not allocate samples to allow for frequency compliance. However, as all other laboratory QC results met control limits this is not expected to impact data quality.
Method Blank	No method blank non-compliances were reported.
Laboratory duplicate RPDs	Laboratory duplicate Relative Percentage Differences (RPD) were within control limits for all samples except for the following: • EB2312062 – RPDs exceeded the LOR based limits (0-20%) in one sediment sample, 0861_SD003_230418, for PFOS (29.9%). The laboratory reported that the sample 0861_SD003_230418, showed poor duplicate results due to sample heterogeneity. These results are not expected to impact data quality.
Laboratory control spike recovery	All Laboratory Control Spikes (LCS) recoveries (where reported) were within control limits, except: • EB2312057 (water): LCS recovery for MeFOSAA and 10:2 FTS were greater than the upper control limit. • EB2312062 (soil): LCS recovery for 10:2 FTS was greater than the upper control limit. • EB2314270 (water): LCS recovery for 10:2 FTS was greater than the upper control limit.

	LCS are known, interference-free matrix spiked with target analytes or certified reference material. The purpose of this quality control type is to monitor precision and accuracy independent of sample matrix and to indicate if the analytical procedure is in control and evaluates the laboratory capability to report unbiased results. Although some non-conformances have been detected in a small number of QC samples, the non-conformances do not include the key analytes, PFHxS and PFOS so the understanding of the concentrations of these compounds is not impacted.
Matrix spike recovery	All matrix spike (MS) recoveries (where reported) were within control limits, except: • EB2312057 (soil): MS recovery for PFPeS, PFOS, PFTrDA and MeFOSA in 0861_SD026_230419 was either greater or lower than the data quality objective. This was confirmed by re-extraction and re-analysis. • EB2312062 (soil): MS recovery for PFHxS and PFOS in 0861_MW048_230417 was not determined. • EB2312761 (water): MS recovery for 10:2 FTS in an anonymous sample was greater than the upper data quality objective. • EB2315514 (soil): MS recovery for PFDS in sample 0861_SD047_230522 was not determined. This indicates that matrix interference may have occurred in the sample from SD026, MW048 and SD047. Review of the results for these samples did not indicate anomalies. This non-conformance is not expected to impact data quality.
Surrogate spike recovery	Surrogate spike recoveries were within control limits for all samples.
QA/QC Data Evaluation	
Comparison of Field Observations and Laboratory Results	No anomalous results between field observations and analysis results were noted.
Data transcription	A random 10% check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by AECOM.
Limits of reporting	LORs were sufficiently low to enable assessment against adopted screening levels except for PFOS for NEMP (HEPA, 2020) ecological guideline values for the 99% protection of freshwater species. The potential exists for concentrations of PFOS to be above the adopted guideline, but below the laboratory LOR. This should be taken into consideration when interpreting and using this data quantitatively where results are reported below LOR. LORs in the following samples were raised due to matrix interference: • 0861_SD043_230419 (EB2312057_003) – PFOS • 0861_SW099_230419 (EB2312062_038 and 0861_MW041_230419 (EB2312062-039)- PFHxS and PFOS. • 0861_SW064_230421 (EB2312062-073) – PFPeA. • 0861_SD011_230417 (EB2312062-002). • 0861_MW024_230428 (E2312761-031). • 0861_MW032_230427 (EB2312761-006) – 6:2 FTS. • 0861_MW054S_230426 (EB2312770-001) – PFBS. • 0861_MW054D_230426 (EB2312770-002) – PFOS. The following samples required dilution prior to analysis: • 0861_SD045_230418 (EB2312057-004) due to matrix interference. • 0861_SD067_230402 (EB2312062_060), 0861_SD080_230420 (EB2312062_061) and 0861_SD041_230418 (EB2312062_020) due to high concentrations of contaminants. • 0861_SD050_230511 (EB2314270-008) due to matrix interference.
Field QA/QC RPDs	RPDs for sediment, groundwater and surface water samples are reported in **Tables C3, C4** and **C5** respectively. Field duplicate and triplicate RPDs were reported within control limits for all groundwater, surface water and sediment samples except the following (the sample with the higher concentration is in bold).

	• 0861_SD059_230417 **and 0861_QC107_230417** for PFHxS (102%) and PFOS (120%), • 0861_SD059_230417 **and 0861_QC207_230417** for PFOS (117%) • 0861_SD304_230428 and **0861_QC110_230428** for PFHxS (186%), PFOS (184%) and FOSA (156%) • 0861_SD304_230428 and **0861_QC210_230428** for PFHxS (185%) and PFOS (186%) • **0861_MW050_230417** and 0861_QC200_230417 for PFOS (32%) • **0861_MW057S_230419** and 0861_QC203_230419 for PFOS (49%) • **0861_MW021_230428** and 0861_QC206_230428 for PFBS (47%), PFPeS (55%), PFHxS (48%), PFOS (46%), PFHxA (51%), PFHpA (40%), PFOA (60%) • **0861_SW059_230417** and 0861_QC201_230417 for PFPeS (30%), PFPeA (41%) and PFOA (42%) The RPD non-conformances are likely to be due to lack of mixing of samples, different extraction techniques used by the primary and secondary laboratories and heterogeneity in the solid samples. Therefore, the elevated RPDs are not considered to affect data interpretation for use in this report. The higher concentration has however conservatively been adopted in the report tables. All remaining samples reported within the control limits.
Other	
Other observations	The new exceedance of sum of PFOS and PFHxS in the groundwater sample from MW024 was in a sample which has matrix interferences. The elevated concentrations recorded in the sample from MW024 during the sampling event may be due to the presence of sediment in the sample. PFAS concentrations in SW/SD018 were not consistent compared to historical results and with other sampling locations along Warrill Creek. The concentrations are consistent with a drainage channel location rather than Warrill Creek. Samples SW/SD018 were renamed SW/SD304. No other key observations were identified in the field or laboratory datasets that could have a material implication on data interpretation and therefore decision-making on the project.

Table C1 Field Blank, Rinsate Blank and Trip Blank Analytical Results

	Lab Report	EB2312062	EB2312062	EB2312062	EB2312062	EB2312062	EB2312761	EB2312761	EB2312761	EB2314270	EB2314270	EB2315514	EB2315514	EB2312062	EB2312062	EB2312062	EB2312062
	Field ID	0861_QC400_230417	0861_QC401_230418	0861_QC402_230419	0861_QC403_230420	0861_QC404_230421	0861_QC406_230426	0861_QC405_230427	0861_QC407_230428	0861_QC408_230509	0861_QC409_230511	0861_QC410_230511	0861_QC411_230522	0861_QC300_230417	0861_QC301_230418	0861_QC302_230419	0861_QC303_230420
	Sampled Date	17/04/2023	18/04/2023	19/04/2023	20/04/2023	21/04/2023	26/04/2023	27/04/2023	28/04/2023	9/05/2023	11/05/2023	22/05/2023	23/05/2023	17/04/2023	18/04/2023	19/04/2023	20/04/2023
	Sample Type	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Field Blank	Rinsate	Rinsate	Rinsate	Rinsate
Analyte	**Units**	**EQL**															
PFBS	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFPeS	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHxS	µg/L	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFHpS	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFOS	µg/L	0.01	<0.02	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01
PFDS	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFBA	µg/L	0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
PFPeA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHxA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHpA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFOA	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFNA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFDA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFUnDA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFDoDA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFTrDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFTeDA	µg/L	0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
FOSA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MeFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EtFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MeFOSA	µg/L	0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EtFOSA	µg/L	0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MFOSAA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
EtFOSAA	µg/L	0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
4:2 FTS	µg/L	0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 FtS	µg/L	0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 FTS	µg/L	0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 FTS	µg/L	0.05	<0.05	<0.01	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Table C1 Field Blank, Rinsate Blank and Trip Blank Analytical Results

	Lab Report	EB2312062	EB2312761	EB2312761	EB2312761	EB2314270	EB2314270	EB2315514	EB2315514	EB2312761	EB2312761
	Field ID	0861_QC304_230421	0861_QC305_230426	0861_QC306_230427	0861_QC307_230428	0861_QC308_230509	0861_QC309_230511	0861_QC310_230522	0861_QC311_230523	0861_QC501_230418	0861_QC503_230426
	Sampled Date	21/04/2023	26/04/2023	27/04/2023	28/04/2023	9/05/2023	11/05/2023	22/05/2023	23/05/2023	18/04/2023	26/04/2023
	Sample Type	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Trip Blank	Trip Blank
Analyte	**Units**	**EQL**									
PFBS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFPeS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHxS	µg/L	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFHpS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFDS	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFBA	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
PFPeA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHxA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFHpA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFOA	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFNA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFUnDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFDoDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFTrDA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
PFTeDA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
FOSA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
MeFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EtFOSE	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MeFOSA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
EtFOSA	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MFOSAA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
EtFOSAA	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
4:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
6:2 FtS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
10:2 FTS	µg/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

		Lab Report Number	EB2312062	EB2312761
		Field ID	0861_QC500_230418	0861_QC502_230426
		Sampled Date	18/04/2023	28/04/2023
		Sample Type	Trip Blank (Soil)	Trip Blank (Soil)

Analyte	**Units**	**EQL**		
10:2 FTS	mg/kg	0.0005	<0.0005	<0.0005
4:2 FTS	mg/kg	0.0005	<0.0005	<0.0005
6:2 FtS	mg/kg	0.0005	<0.0005	<0.0005
8:2 FTS	mg/kg	0.0005	<0.0005	<0.0005
EtFOSA	mg/kg	0.0005	<0.0005	<0.0005
EtFOSAA	mg/kg	0.0002	<0.0002	<0.0002
EtFOSE	mg/kg	0.0005	<0.0005	<0.0005
MeFOSA	mg/kg	0.0005	<0.0005	<0.0005
MFOSAA	mg/kg	0.0002	<0.0002	<0.0002
MeFOSE	mg/kg	0.0005	<0.0005	<0.0005
PFBS	mg/kg	0.0002	<0.0002	<0.0002
PFBA	mg/kg	0.001	<0.001	<0.001
PFDS	mg/kg	0.0002	<0.0002	<0.0002
PFDA	mg/kg	0.0002	<0.0002	<0.0002
PFDoDA	mg/kg	0.0002	<0.0002	<0.0002
PFHpS	mg/kg	0.0002	<0.0002	<0.0002
PFHpA	mg/kg	0.0002	<0.0002	<0.0002
PFHxA	mg/kg	0.0002	<0.0002	<0.0002
PFNA	mg/kg	0.0002	<0.0002	<0.0002
FOSA	mg/kg	0.0002	<0.0002	<0.0002
PFPeS	mg/kg	0.0002	<0.0002	<0.0002
PFPeA	mg/kg	0.0002	<0.0002	<0.0002
PFTeDA	mg/kg	0.0005	<0.0005	<0.0005
PFTrDA	mg/kg	0.0002	<0.0002	<0.0002
PFUnDA	mg/kg	0.0002	<0.0002	<0.0002
Sum of PFAS	mg/kg	0.0002	<0.0002	<0.0002
Sum of PFHxS and PFOS	mg/kg	0.0002	<0.0002	<0.0002
PFOS	mg/kg	0.0002	<0.0002	<0.0002
PFOA	mg/kg	0.0002	<0.0002	<0.0002
PFHxS	mg/kg	0.0002	<0.0002	<0.0002

Table C3 Sediment Duplicate and Triplicate Analytical Results

Lab Report Number			EB2312062-AA	EB2312062-AA	RPD	RN1393124	RPD	EB2312057	EB2312062-AB	RPD	EB2312062-AB	RPD	EB2312761-AB	EB2312761-AA	RPD	RN1392055	RPD	EB2312761-AA	EB2312761-AA	RPD	RN1392055	RPD
Field ID			0861_SD059_230417	0861_QC107_230417		0861_QC207_230417		0861_SD098_230418	0861_QC108_230417		0861_QC208_230418		0861_SD025_230426	0861_QC109_230426		0861_QC209_230426		0861_SD304_230428	0861_QC110_230428		0861_QC210_230428	
Sampled Date			17/04/2023	17/04/2023		17/04/2023		18/04/2023	18/04/2023		18/04/2023		26/04/2023	26/04/2023		26/04/2023		28/04/2023	28/04/2023		28/04/2023	
Sample Type			Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Analyte	**Units**	**EQL**																				
PFBS	mg/kg	0.0002 : 0.001 (Interlab)	0.0002	0.0006	100	<0.001	0	<0.0002	<0.0002	0	<0.0002	0	<0.0002	<0.0002	0	<0.001	0	<0.0005	0.0015	100	0.0017	109
PFPeS	mg/kg	0.0002 : 0.001 (Interlab)	0.0002	0.0004	67	<0.001	0	<0.0002	<0.0002	0	<0.0002	0	<0.0002	<0.0002	0	<0.001	0	<0.0005	0.0015	100	0.0017	109
PFHxS	mg/kg	0.0002 : 0.001 (Interlab)	**0.0015**	**0.0046**	**102**	<0.001	NC	<0.0002	<0.0002	0	<0.0002	0	<0.0002	<0.0002	0	<0.001	0	<0.0005	**0.0155**	**188**	**0.013**	**185**
PFHpS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	0.0004	67	<0.001	0	<0.0002	<0.0002	0	<0.0002	0	<0.0002	<0.0002	0	<0.001	0	<0.0005	<0.0026	0	<0.001	0
PFOS	mg/kg	0.0002 : 0.002 (Interlab)	**0.0091**	**0.0365**	**120**	**0.035**	**117**	0.001	0.0007	35	0.0006	50	0.0005	0.0003	50	<0.002	0	**0.0074**	**0.174**	**184**	**0.21**	**186**
PFDS	mg/kg	0.0002	<0.0002	0.0011	138	<0.001	0	<0.0002	<0.0002	0	<0.0002	0	<0.0002	<0.0002	0	<0.001	0	<0.0005	<0.0024	0	0.0024	131
PFBA	mg/kg	0.001	<0.001	<0.001	0	<0.002	0	<0.001	<0.001	0	<0.001	0	<0.001	<0.001	0	<0.002	0	<0.002	<0.001	0	<0.002	0
PFPeA	mg/kg	0.0002 : 0.002 (Interlab)	0.0005	0.0009	57	<0.002	0	<0.0002	<0.0002	0	<0.0002	0	<0.0002	<0.0002	0	<0.002	0	<0.0005	0.0006	18	<0.002	0
PFHxA	mg/kg	0.0002 : 0.001 (Interlab)	0.0008	0.0013	48	0.0017	130	<0.0002	<0.0002	0	<0.0002	0	<0.0002	<0.0002	0	<0.001	0	<0.0005	0.0019	117	0.0018	113
PFHpA	mg/kg	0.0002 : 0.001 (Interlab)	0.0002	0.0004	67	<0.001	0	<0.0002	<0.0002	0	<0.0002	0	<0.0002	<0.0002	0	<0.001	0	<0.0005	<0.0002	0	<0.001	0
PFOA	mg/kg	0.0002 : 0.001 (Interlab)	0.0003	0.0007	80	<0.001	0	<0.0002	<0.0002	0	<0.0002	0	<0.0002	<0.0002	0	<0.001	0	<0.0005	0.0006	18	<0.001	0
PFNA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.0002	0	<0.0002	<0.0002	0	<0.001	0	<0.0005	<0.0002	0	<0.001	0
PFDA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.0002	0	<0.0002	<0.0002	0	<0.001	0	<0.0005	<0.0002	0	<0.001	0
PFUnDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.0002	0	<0.0002	<0.0002	0	<0.002	0	<0.0005	**<0.0002**	0	<0.002	0
PFDoDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	0.0005	86	<0.002	0	<0.0002	<0.0002	0	<0.0002	0	<0.0002	<0.0002	0	<0.002	0	<0.0005	<0.0004	0	<0.002	0
PFTrDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.0002	0	<0.0002	<0.0002	0	<0.002	0	<0.0005	<0.0002	0	<0.002	0
PFTeDA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.0005	0	<0.0005	<0.0005	0	<0.002	0	<0.0012	<0.0005	0	<0.002	0
FOSA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0	<0.0002	<0.0002	0	<0.0002	0	<0.0002	<0.0002	0	<0.001	0	<0.0005	**0.004**	**156**	0.0019	117
MeFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.0005	0	<0.0005	<0.0005	0	<0.005	0	<0.0012	<0.0005	0	<0.005	0
EtFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0006	<0.0005	0	<0.005	0	<0.0005	<0.0005	0	<0.0005	0	<0.0005	<0.0005	0	<0.005	0	<0.0012	<0.0005	0	<0.005	0
MeFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.0005	0	<0.0005	<0.0005	0	<0.002	0	<0.0012	<0.0005	0	<0.002	0
EtFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.0005	0	<0.0005	<0.0005	0	<0.002	0	<0.0012	<0.0005	0	<0.002	0
MFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.0002	0	<0.0002	<0.0002	0	<0.002	0	<0.0005	<0.0002	0	<0.002	0
EtFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0	<0.0002	<0.0002	0	<0.0002	0	<0.0002	<0.0002	0	<0.002	0	<0.0005	<0.0002	0	<0.002	0
4:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.0005	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0
6:2 FtS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.0005	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0
8:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.0005	0	<0.0005	<0.0005	0	<0.001	0	<0.0005	<0.0005	0	<0.001	0
10:2 FTS	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.0005	0	<0.0005	<0.0005	0	<0.002	0	<0.0005	<0.0005	0	<0.002	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory
NC is not calculable

Table C3 Sediment Duplicate and Triplicate Analytical Results

Lab Report Number	EB2315514	EB2315514	RPD		RPD
Field ID	0861_SD090_230522	0861_QC111_230522		0861_QC211_230522	
Sampled Date	22/05/2023	22/05/2023		22/05/2023	
Sample Type	Primary	Duplicate		Triplicate	

Analyte	Units	EQL					
PFBS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0
PFPeS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0
PFHxS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0
PFHpS	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0
PFOS	mg/kg	0.0002 : 0.002 (Interlab)	<0.004	<0.0014	0	<0.002	0
PFDS	mg/kg	0.0002	<0.0002	<0.0006	0	<0.001	0
PFBA	mg/kg	0.001	<0.001	<0.001	0	<0.002	0
PFPeA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0
PFHxA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0
PFHpA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0
PFOA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0
PFNA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0
PFDA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0
PFUnDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0
PFDoDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0
PFTrDA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0
PFTeDA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0
FOSA	mg/kg	0.0002 : 0.001 (Interlab)	<0.0002	<0.0002	0	<0.001	0
MeFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0
EtFOSE	mg/kg	0.0005 : 0.005 (Interlab)	<0.0005	<0.0005	0	<0.005	0
MeFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0
EtFOSA	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0
MFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0
EtFOSAA	mg/kg	0.0002 : 0.002 (Interlab)	<0.0002	<0.0002	0	<0.002	0
4:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	0	<0.001	0
6:2 FtS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	0	<0.001	0
8:2 FTS	mg/kg	0.0005 : 0.001 (Interlab)	<0.0005	<0.0005	0	<0.001	0
10:2 FTS	mg/kg	0.0005 : 0.002 (Interlab)	<0.0005	<0.0005	0	<0.002	0

Table C4 Groundwater Duplicate and Triplicate Analytical Results

	Lab Report Number	EB2312062-AA	EB2312062-AA		RN1391403		EB2312057	EB2312062-AA		RN1391403		EB2312062-AA	EB2312062-AA		RN1391403		EB2312761-AA	EB2312761-AA		RN1392055		EB2312761-AA
	Field ID	0861_MW050_230417	0861_QC100_230417	RPD	0861_QC200_230417	RPD	0861_MW057S_230419	0861_QC103_230419	RPD	0861_QC203_230419	RPD	0861_MW309_230420	0861_QC104_230420	RPD	0861_QC204_230420	RPD	0861_MW023_230426	0861_QC105_230426	RPD	0861_QC205_230426	RPD	0861_MW021_230428
	Sampled Date	17/04/2023	17/04/2023		17/04/2023		19/04/2023	19/04/2023		19/04/2023		20/04/2023	20/04/2023		20/04/2023		26/04/2023	26/04/2023		26/04/2023		28/04/2023
	Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary
Analyte	**Units**	**EQL**																				
PFBS	µg/L	0.02 : 0.01 (Interlab)	0.04	0.04	0	0.028	35	0.28	0.29	4	0.25	11	<0.02	<0.02	0	<0.01	0	0.06	0.06	0	0.049	20	2.42
PFPeS	µg/L	0.02 : 0.01 (Interlab)	0.02	0.02	0	0.014	35	0.21	0.25	17	0.18	15	<0.02	<0.02	0	<0.01	0	0.05	0.05	0	0.045	11	4.75
PFHxS	µg/L	0.01	0.13	0.12	8	0.084	43	0.97	0.9	7	0.81	18	<0.01	<0.01	0	<0.01	0	0.26	0.27	4	0.23	12	48.9
PFHpS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.02	0.03	40	<0.01	67	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	2.2
PFOS	µg/L	0.01 : 0.02 (Interlab)	0.22	0.22	0	**0.16**	**32**	0.28	0.3	7	**0.17**	**49**	<0.01	<0.01	0	<0.02	0	0.16	0.15	6	0.11	37	92.8
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25
PFBA	µg/L	0.1 : 0.05 (Interlab)	<0.1	<0.1	0	<0.05	0	0.1	<0.1	0	0.093	7	<0.1	<0.1	0	<0.05	0	<0.1	<0.1	0	<0.05	0	<1.2
PFPeA	µg/L	0.02	<0.02	<0.02	0	<0.02	0	0.04	0.04	0	0.031	25	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	1.15
PFHxA	µg/L	0.02 : 0.01 (Interlab)	<0.02	0.02	0	<0.01	0	0.19	0.15	24	0.15	24	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	5.75
PFHpA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	0.03	0.04	29	0.024	22	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	1.5
PFOA	µg/L	0.01	<0.01	<0.01	0	<0.01	0	0.06	0.07	15	0.039	42	<0.01	<0.01	0	<0.01	0	<0.01	<0.01	0	<0.01	0	4.45
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25
PFTrDA	µg/L	0.02	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.25
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.62
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25
MeFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.62
EtFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.62
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.62
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.62
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.25
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.25
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.25
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.25
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.25

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

NC is not calculable

Table C4 Groundwater Duplicate and Triplicate Analytical Results

Lab Report Number	EB2312761-AA		RN1392055		
Field ID	0861_QC106_230428	**RPD**	0861_QC206_230428	**RPD**	
Sampled Date	28/04/2023		28/04/2023		
Sample Type	Duplicate		Triplicate		

Analyte	**Units**	**EQL**				
PFBS	µg/L	0.02 : 0.01 (Interlab)	2.34	3	**1.5**	**47**
PFPeS	µg/L	0.02 : 0.01 (Interlab)	4.85	2	**2.7**	**55**
PFHxS	µg/L	0.01	48.2	1	**30**	**48**
PFHpS	µg/L	0.02 : 0.01 (Interlab)	2.51	13	2.3	4
PFOS	µg/L	0.01 : 0.02 (Interlab)	90.7	2	**58**	**46**
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.24	0	<0.01	0
PFBA	µg/L	0.1 : 0.05 (Interlab)	<1.2	0	0.44	0
PFPeA	µg/L	0.02	1.05	9	0.89	25
PFHxA	µg/L	0.02 : 0.01 (Interlab)	5.71	1	**3.4**	**51**
PFHpA	µg/L	0.02 : 0.01 (Interlab)	1.63	8	**1**	**40**
PFOA	µg/L	0.01	4.36	2	**2.4**	**60**
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.24	0	0.072	0
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.24	0	0.013	0
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.24	0	<0.01	0
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.24	0	<0.01	0
PFTrDA	µg/L	0.02	<0.24	0	<0.02	0
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.61	0	<0.02	0
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.24	0	0.01	0
MeFOSE	µg/L	0.05	<0.61	0	<0.05	0
EtFOSE	µg/L	0.05	<0.61	0	<0.05	0
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.61	0	<0.02	0
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.61	0	<0.02	0
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.24	0	<0.01	0
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.24	0	<0.01	0
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.24	0	<0.01	0
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	<0.24	0	0.052	0
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.24	0	0.053	0
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.24	0	<0.01	0

*RPDs have only been
**High RPDs are in bol
***Interlab Duplicates a
NC is not calculable

Table C5 Surface Water Duplicate and Triplicate Analytical Results

	Lab Report Number	EB2312062-AA	EB2312062-AA		RN1391403		EB2312057	EB2312062-AB		RN1391403		EB2312062-AA	EB2312062-AA		RN1391403		EB2315514	EB2315514			
	Field ID	0861_SW059_230417	0861_QC101_230417	RPD	0861_QC201_230417	RPD	0861_SW098_230418	0861_QC102_230418	RPD	0861_QC202_230418	RPD	0861_SW076_230418	0861_QC103_230418	RPD	0861_QC203_230418	RPD	0861_SW090_230522	0861_QC112_230522	RPD	0861_QC212_230522	RPD
	Sampled Date	17/04/2023	17/04/2023		17/04/2023		18/04/2023	18/04/2023		18/04/2023		18/04/2023	18/04/2023		18/04/2023		22/05/2023	22/05/2023		22/05/2023	
	Sample Type	Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate		Primary	Duplicate		Triplicate	
Analyte	**Units**	**EQL**																			
PFBS	µg/L	0.02 : 0.01 (Interlab)	0.44	0.39	12	0.35	23	<0.02	<0.02	0	<0.01	0	0.39	0.45	14	0.3	26	<0.02	<0.02	0	<0.01	0
PFPeS	µg/L	0.02 : 0.01 (Interlab)	0.38	0.39	3	**0.28**	**30**	<0.02	<0.02	0	<0.01	0	0.34	0.34	0	0.27	23	<0.02	<0.02	0	<0.01	0
PFHxS	µg/L	0.01	2.28	2.19	4	1.8	24	0.05	0.04	22	0.033	41	1.83	1.76	4	1.8	2	<0.01	<0.01	0	<0.01	0
PFHpS	µg/L	0.02 : 0.01 (Interlab)	0.1	0.1	0	0.052	63	<0.02	<0.02	0	<0.01	0	0.1	0.09	11	0.059	52	<0.02	<0.02	0	<0.01	0
PFOS	µg/L	0.01 : 0.02 (Interlab)	2.66	2.59	3	2	28	0.12	0.11	9	0.077	44	1.93	1.98	3	1.5	25	<0.01	<0.01	0	<0.02	0
PFDS	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFBA	µg/L	0.1 : 0.05 (Interlab)	0.3	0.3	0	0.27	11	<0.1	<0.1	0	<0.05	0	0.2	0.2	0	0.21	5	<0.1	<0.1	0	<0.05	0
PFPeA	µg/L	0.02	0.68	0.62	9	**0.45**	**41**	<0.02	<0.02	0	<0.02	0	0.46	0.5	8	0.41	11	<0.02	<0.02	0	<0.02	0
PFHxA	µg/L	0.02 : 0.01 (Interlab)	0.89	0.86	3	0.67	28	<0.02	<0.02	0	0.011	0	0.78	0.81	4	0.64	20	<0.02	<0.02	0	0.011	0
PFHpA	µg/L	0.02 : 0.01 (Interlab)	0.16	0.18	12	0.15	6	<0.02	<0.02	0	<0.01	0	0.18	0.17	6	0.15	18	<0.02	<0.02	0	<0.01	0
PFOA	µg/L	0.01	0.23	0.22	4	**0.15**	**42**	<0.01	<0.01	0	<0.01	0	0.24	0.26	8	0.18	29	<0.01	<0.01	0	<0.01	0
PFNA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	0.011	0	<0.02	<0.02	0	<0.01	0
PFDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFUnDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFDoDA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
PFTrDA	µg/L	0.02	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0	<0.02	<0.02	0	<0.02	0
PFTeDA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
FOSA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
MeFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
EtFOSE	µg/L	0.05	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0	<0.05	<0.05	0	<0.05	0
MeFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
EtFOSA	µg/L	0.05 : 0.02 (Interlab)	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0	<0.05	<0.05	0	<0.02	0
MFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
EtFOSAA	µg/L	0.02 : 0.01 (Interlab)	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0	<0.02	<0.02	0	<0.01	0
4:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
6:2 FtS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	0.2	0.17	16	0.16	22	<0.05	<0.05	0	<0.01	0
8:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0
10:2 FTS	µg/L	0.05 : 0.01 (Interlab)	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0	<0.05	<0.05	0	<0.01	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-20 x EQL); 30 (> 20 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

NC is not calculable

Appendix D

Chain of Custody Forms

Appendix D Chain of Custody Forms

Chain of Custody

COC Page 1 of 5

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manage[redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	Analysis Request: HOLD	Notes
1	0861_SW021-230426	2614		X							X		
2	0861_SD021-230426	"			X						X		
3	0861_MW042_230427	2714		X							X		
4	0861_MW043-230427	"		X							X		
5	0861_MW006-230426	2614		X							X		
6	0861_MW032_230427	2714		x							X		
7	0861_SD039_230426	2614			X						X		
8	0861_SW039_230426	"		X							X		
9	0861_SD015-230426	"			X						X		
10	0861_SW015-230426	"		X							X		
11	0861_SD025-230426	"			X						X		
12	0861_SW025-230426	"		X							X		
13	0861_SD048_230427	2714			X						X		
14	0861_SW048_230427	2714		X							X		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Relinquished by: [redacted] Signed: [redacted] Date:
Received by: [redacted] Signed: [redacted] Date: 28-04-23

Relinquished by: Sign
Received by: Sign

1720

Environmental Division
Brisbane
Work Order Reference
EB2312761

Telephone : +61-7-3243 7222

AECOM OFFSITE 2

Chain of Custody

COC Page 2 of 5

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By:

Mobile no. :

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	TRIP BLANK (S)	TRIP BLANK (W)	HOLD	Notes
15	0861_QC105_230426	26/4		X							X				
	0861_QC205_230426	"		X							X				FWD TO NMI
16	0861_QC302_230426	"			X						X				
	0861_QC402_230426	"			X						X				FWD TO NMI
17	0861_QC505_230426	"		X							X				
18	0861_QC605_230426	"		X							X				
19	0861_QC606_230427	27/4		X							X				
20	0861_QC506_230427	27/4		X							X				
21	0861_MW023_230426	26/4		X							X				
22	0861_SD033_230427	27/4			X						X				
23	0861_SW008_230427	27/4		X							X				
24	0861_TRIPBLANK(040615)				X							X			
25	0861_TRIPBLANK(060422)				X							X			
26	0861_MW031_230426	26/4		X											

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted]	Signed: [redacted]	Date:	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed: [redacted]	Date: 28.04.23 1720	Received by:	Signed:	Date:

AECOM

Chain of Custody

COC Page 3 of 5

AECOM Australia Pty Ltd [redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. :

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
27	0861_SD052-230426	26/4			X						X		
28	0861_SW052-230426	↓		X							X		
29	0861_SD049_230426				X						X		
30	0861_SW049_230426	↓		X							X		
31	0861_MW024-230428	28/4		X							X		
32	0861_SD008-230428				X						X		
33	0861_MW021-230428			X							X		
34	0861_QC106-230428			X							X		
	0861_QC206-230428			X							X		FWD TO NMI
35	0861_SW020-230428			X							X		
36	0861_SD020-230428				X						X		
37	0861_SD009-"				X						X		
38	0861_SW009-"			X							X		
39	0861_SW004-"			X							X		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted]	Signed: [redacted]	Date:	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed: [redacted]	Date: 28.04.23	Received by:	Signed:	Date:

1720

AECOM

Chain of Custody

COC Page 4 of 5

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By: [redacted]

Mobile no. :

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	Analysis Request: HOLD	Notes
40	0861_SD004_230428	28/04			X						X		
41	0861_SD005_"	"			X						X		
42	0861_SW005_"	"		X							X		
43	0861_SD034_"	"			X						X		
44	0861_SW034_"	"		X							X		
45	0861_SD016_"	"			X						X		
46	0861_SW016_"	"		X							X		
47	0861_SW018_"	"		X							X		
48	0861_SD018_"	"			X						X		
49	0861_MW022_"	"		X							X		
SNR	0861_SD049_"	"			X						X		
SNR	0861_SW049_"	"		X							X		
SNR	0861_SW052_"	"		X							X		
SNR	0861_SD052_"	"			X						X		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted]	Signed:	Date:	
Received by: [redacted]	Signed:	Date: 28.04.23	
Relinquished by:	Signed:	Date:	
Received by:	Signed:	Date:	

1720

AECOM

Chain of Custody

COC Page 5 of 5

AECOM Australia Pty Ltd [redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. :

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
50	0861_QC303_230428	28/04			X						X		
	0861_QC403_230428	28/04			X						X		FWS TO NM1
51	0861_QC507_"	"		X							X		
52	0861_QC607_"	"		X							X		
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice [redacted]

Lab Report No | Esky ID

Relinquished [redacted]	Signed:	Date:	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed:	Date: 28.04.23	Received by:	Signed:	Date:

1720

AECOM EDQ

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. :

Project Name: QLD_0861_PFASOMP [redacted]

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: James Peachey

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0861_MW054S_230426	26/04		X						2	X		
2	0861_MW054D_230426	26/04		X						2	X		
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Environmental Division
Brisbane
Work Order Reference
EB2312770

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted] Signed: [redacted] Date: 26/4/23

Received by: [redacted] Signed: [redacted] Date: 28.04.23

Relinquished by: Signed: Date:

Received by: Signed: Date:

1820

Chain of Custody

COC Page 1 of 1

Laboratory Details

Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:

Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Email reports to: [redacted]

Sampled By: AECOM **Project Name:** QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Mobile no. : [redacted]

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat 7. Project Manager: James Peachey

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix			Preservation				Container	EP231X (PFAS Std 28)	HOLD	Notes
			soil	water	sed	filt'ed	acid	ice	other	(No. & type)			
1	0861_SW028_230509	9/05/2023		X				X		2 x 125 ml	X		
2	0861_SD028_230509	9/05/2023			X			X		1P	X		
3	0861_MW044_230511	11/05/2023		X				X		2 x 125 ml	X		
4	0861_MW035_230509	9/05/2023		X				X		2 x 125 ml	X		
5	0861_MW055S_230511	11/05/2023		X				X		2 x 125 ml	X		
6	0861_MW055D_230511	11/05/2023		X				X		2 x 125 ml	X		
7	0861_SW050_230511	11/05/2023		X				X		2 x 125 ml	X		
8	0861_SD050_230511	11/05/2023			X			X		1P	X		
9	0861_QC309_230511	11/05/2023		X				X		2 x 125 ml	X		
10	0861_QC409_230511	11/05/2023		X				X		2 x 125 ml	X		
11	0861_QC308_230509	9/05/2023		X				X		2 x 125 ml	X		
12	0861_QC408_230509	9/05/2023		X				X		2 x 125 ml	X		

Environmental Division
Brisbane
Work Order Reference
EB2314270

Telephone : + 61-7-3243 7222

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No. | Esky ID

Relinquished by: [redacted]	Signed:	Date:	Relinquished by:	Signed:	Date:
Received by:	Signed: 12/5/23	Date: 11:13	Received by:	Signed:	Date:

AECOM — **Chain of Custody** — COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: AECOM | **Project Name:** QLD_0861_PFASOMP_23 | **AECOM Project #:** 60612563 3.1 | **Purchase Order No:** 60612563 3.1

Mobile no. [redacted]

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manage [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	HOLD	Notes
1	0861_MW002_230522	22/05/2023		X				X		2 X 20ml	X		
2	0861_MW030_230523	23/05/2023		X				X		2 X 20ml	X		
3	0861_MW033_230523	23/05/2023		X				X		2 X 20ml	X		
4	0861_MW034_230522	22/05/2023		X				X		2 X 20ml	X		
5	0861_SW036_230522	22/05/2023		X				X		2 X 20ml	X		
6	0861_SD036_230522	22/05/2023			X			X		1 x 200ml	X		
7	0861_SW047_230522	22/05/2023		X				X		2 X 20ml	X		
8	0861_SD047_230522	22/05/2023			X			X		1 x 200ml	X		
9	0861_QC310_230522	22/05/2023		X				X		2 X 20ml	X		
10	0861_QC410_230522	22/05/2023		X				X		2 X 20ml	X		
11	0861_SW088_230522	22/05/2023		X				X		2 X 20ml	X		
12	0861_SD088_230522	22/05/2023			X			X		1 x 200ml	X		
13	0861_SW089_230522	22/05/2023		X				X		2 X 20ml	X		
14	0861_SD089_230522	22/05/2023			X			X		1 x 200ml	X		
15	0861_SW090_230522	22/05/2023		X				X		2 X 20ml	X		
16	0861_SD090_230522	22/05/2023			X			X		1 x 200ml	X		
17	0861_SW091_230522	22/05/2023		X				X		2 X 20ml	X		
18	0861_SD091_230522	22/05/2023			X			X		1 x 200ml	X		
19	0861_SW094_230522	22/05/2023		X				X		2 X 20ml	X		
20	0861_SD094_230522	22/05/2023			X			X		1 x 200ml	X		
21	0861_QC111_230522	22/05/2023		X				X		4 X 20ml	X		
—	0861_QC211_230522	22/05/2023		X				X		4 X 20ml	X		Forward to NMI
22	0861_QC112_230522	22/05/2023			X			X		1 x 200ml	X		
—	0861_QC212_230522	22/05/2023			X			X		1 x 200ml	X		Forward to NMI
23	0861_QC311_230523	23/05/2023		X				X		1 x 200ml	X		
24	0861_QC411_230523	23/05/2023		X				X		1 x 200ml	X		

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted]	Signed:	Date:	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed:	Date: 23/5/23	Received by:	Signed:	Date:

1434

Environmental Division
Brisbane
Work Order Reference
EB2315514

Telephone : + 61-7-3243 7222

AECOM OFF-SITE 1

Chain of Custody

COC Page 1 of 1

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By [redacted]
Mobile no. : [redacted]

Project Name: QLD_0861_PFASOMP **AECOM Project #:** 60612563 3.1 **Purchase Order No:** 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details:)	

6. Report Format: ESdat 7. Project Manager: James Peachey

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0861_SD026_230419	19.04.23			X						X		
2	0861_SD040_230418	18.04.23			X						X		
3	0861_SD043_230419	19.04.23			X						X		
4	0861_SD045_230418	18.04.23			X						X		
5	0861_SD098_230418	18.04.23			X						X		
6	0861_SW098_230418	18.04.23		X							X		
7	0861_SW045_230418	"									X		
8	0861_SW040_230418	"									X		
9	0861_SW026_230419	19.04.23									X		
10	0861_SW043_230419	19.04.23									X		
11	0861_MW057S_230419										X		
12	0861_MW057I_230419	19.04.23									X		
13	0861_MW056I_230418	18.04.23									X		
	0861_												

Environmental Division Brisbane
Work Order Reference
EB2312057

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date:	
Received by: [redacted]	Signed:	Date: 21.04.23	
Relinquished by:	Signed:	Date:	
Received by:	Signed:	Date:	

1431

AECOM BASE

Chain of Custody

COC Page 1 of 6

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manage [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
1	0861_SD097-230417	17.04.23			X						X		
2	0861_SD011-				X						X		
3	0861_SD030-				X						X		
4	0861_SD059-				X						X		
5	0861_QC300-				X						X		
	0861_QC400-				X						X		FWD TO NMI
6	0861_SW011-			X							X		
7	0861_MW048-			X							X		
8	0861_MW050-			X							X		
9	0861_SW027-			X							X		
10	0861_MW046-			X							X		
11	0861_SW030-			X							X		
12	0861_SW059-			X							X		
13	0861_QC100-230417	17.04.23		X							X		

Environmental Division
Brisbane
Work Order Reference
EB2312062

Telephone : +61-7-3243 7222

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Relinquished by: [redacted] Signed: [redacted] Date: 21/04
Received by: [redacted] Signed: Date: 21.04.23

Relinquished by:
Received by:

1431

AECOM BASE

Chain of Custody

COC Page 2 of 6

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By:

Mobile no. :

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: fil'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)									HOLD	Notes
	0861_QC200_230417	17.4.23		X							X										FWD TO NMI
14	0861_QC101_	"		"							X										
	0861_QC201_	"		"							X										FWD TO NMI
15	0861_QC500_	"		"							X										
16	0861_QC600_230417	17.4.23		X							X										
17	0861_SD076_230418	18.4.23			X						X										
18 ✓	0861_SD002_	"			"						X										
19 ✓	0861_SD037_	"			"						X										
20 ✓	0861_SD041_	"			"						X										
21 ✓	0861_SD056_	"			"						X										
22 ✓	0861_SD003_	"			"						X										
23	0861_QC301_	"			"						X										
24	0861_QC401_	"			X						X										
25 ✓	0861_SW002_	18-04-23		X							X										

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME**

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed:	Date:	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed:	Date: 21.04.23	Received by:	Signed:	Date:

1431

AECOM BASE

Chain of Custody

COC Page 3 of 6

AECOM Australia Pty Ltd [redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: James Peachey

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
26	0861_SW076_230418	18.04.23		X							X		
27 ✓	0861_SW037_	↑		↑							X		
28 ✓	0861_SW003_										X		
29 ✓	0861_SW041_										X		
30 ✓	0861_SW056_										X		
31	0861_QC102_										X		
	0861_QC202_										X		FWD TO NMI
32	0861_QC103_										X		
	0861_QC203_										X		FWD TO NMI
33	0861_QC501_	↓		↓							X		
34	0861_QC601_230418	18.04.23		X							X		
35	0861_SD099_230419	19.04.23			X						X		
36	0861_SD051_	↕			X						X		
37	0861_SD006_	19.04.23			X						X		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice: [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date:	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed:	Date: 21.04.23	Received by:	Signed:	Date:

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AECOM BASE 4

Chain of Custody

COC Page 4 of 6

AECOM Australia Pty Ltd [redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. :
Project Name: QLD_0861_PFASOMP
AECOM Project #: 60612563 3.1
Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat
7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	water	sed	Preservation: filt'ed	acid	ice	other	Container (No. & type)	EP231X (PFAS Std 28)	HOLD	Notes
38	0861_SW099_230419	19.04.23		X							X		
39	0861_MW041_										X		
40	0861_SW051_										X		
41	0861_SW100_										X		
42	0861_QC103										X		
	0861_QC203										X		FWD TO NMI
43	0861_QC503										X		
44	0861_QC603_230419	19.04.23									X		
45	0861_MW047_230420										X		
46	0861_MW028_										X		
47	0861_MW037_										X		
48	0861_MW036_										X		
49	0861_MW026_										X		
50	0861_MW029_										X		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that the files use the PROJECT NAME

Temp. received: °C

Report & invoice [redacted]

Lab Report No | Esky ID

Relinquished by [redacted]	Signed [redacted]	Date:	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed [redacted]	Date: 21.04.23	Received by:	Signed:	Date:

AECOM BASE

Chain of Custody

COC Page 5 of 6

AECOM Australia Pty Ltd

[redacted]

Email reports to: [redacted]

Laboratory Details

Lab. Name:

Lab. Address:

Contact Name:

Lab. Ref:

Tel:

Fax:

Preliminary Report by:

Final Report by:

Lab Quote No: SY/139/19

Sampled By: [redacted]

Mobile no. :

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Analysis Request

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	EP231X (PFAS Std 28)	TRIP BLANK (3)	TRIP BLANK (4)	HOLD	Notes
51	0861_MW309_230420	230420		X							X				
52	0861_MW025_										X				
53	0861_QC104_										X				
	0861_QC204_										X				FWD TO NMI
54	0861_QC503_										X				
55	0861_QC603_230420	230420		X							X				
56	0861_SD038_				X						X				
57	0861_SD053_				X						X				
58	0861_SD079_				X						X				
59	0861_SD064_				X						X				
60	0861_SD067_				X						X				
61	0861_SD080_				X						X				
62	0861_TRIP BLANK (3)				X							X			
63	0861_TRIP BLANK (4)			X									X		

Comments: Please send ESdat files to DERP.labreports@esdat.com.au and ensure that [redacted]

Temp. received: °C

Report & invoice [redacted]

Lab Report No: Esky ID:

Relinquished by: [redacted]	Signed: [redacted]	Date:	Relinquished by:	Signed:	Date:
Received by: [redacted]	Signed:	Date: 21.04.23	Received by:	Signed:	Date:

1431

AECOM BASE

Chain of Custody

COC Page 6 of 6

AECOM Australia Pty Ltd [redacted]

Email reports to: [redacted]

Laboratory Details
Lab. Name:
Lab. Address:
Contact Name:
Lab. Ref:
Tel:
Fax:
Preliminary Report by:
Final Report by:
Lab Quote No: SY/139/19

Sampled By: [redacted]
Mobile no. :

Project Name: QLD_0861_PFASOMP

AECOM Project #: 60612563 3.1

Purchase Order No: 60612563 3.1

Specifications: Please report in ESdat format

	Yes (tick)
1. Urgent TAT required? (please circle: 24hr 48hr 5 days)	
2. Fast TAT Guarantee Required?	
3. Is any sediment layer present in waters to be excluded from extractions?	
4. % extraneous material removed from samples to be reported as per NEPM 5.1.1?	
5. Special storage requirements? (details: _____)	

6. Report Format: ESdat

7. Project Manager: [redacted]

Lab. ID	Sample ID	Sampling Date	Matrix: soil	Matrix: water	Matrix: sed	Preservation: filt'ed	Preservation: acid	Preservation: ice	Preservation: other	Container (No. & type)	Analysis Request: EP231X (PFAS Std 28)	Analysis Request: HOLD	Notes
64	0861_ MW020 - 230421	21.04.23		X							X		
65	0861_ MW005 -	↑		X							X		
66	0861_ MW007 -			X							X		
67	0861_ QC504 -			X							X		
68	0861_ QC604 -			X							X		
69	0861_ MW012 -			X							X		
70	0861_ SW080 -	↓		X							X		
71	0861_ SW067 - 230421	↓		X							X		
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												
	0861_												

Comments: **Please send ESdat files to DERP.labreports@esdat.com.au and ensure that** Temp. received: °C

Report & invoice: [redacted]

Lab Report No | Esky ID

Relinquished by: [redacted]	Signed: [redacted]	Date:	Relinquished by:	Signed:	Date:
Received by: EH [redacted]	Signed: [redacted]	Date: 21.04.23	Received by:	Signed:	Date:

1431

Appendix E

Laboratory Analytical Certificates and QA/QC Reports

Appendix E Laboratory Analytical Certificates and QA/QC Reports

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2312057**		
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0861_PFASOMP_23	Page	: 1 of 3
Order number	: 60612563 3.1	Quote number	: ES2022AECOMAU0018 (SY/139/19 v4 60612563_2.1)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: OFF_SITE 1		
Sampler	: [redacted]		

Dates

Date Samples Received	: 21-Apr-2023 14:31	Issue Date	: 19-May-2023
Client Requested Due Date	: 03-May-2023	Scheduled Reporting Date	: **03-May-2023**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 27.2°C, 28.4°C
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 13 / 13

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***SRN Reissued 19/05/2023: As per email from [redacted] on 19/05/2023, Project ID changed to QLD_0861_PFASOMP_23.***
- **Please be advised, a sample ID provided on the COC (0861_MW057I_230419) differ from the ID provided on the sample containers (0861_MW057D_230419). ALS will proceed with analysis using the ID provided on the COC.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2312057-001	19-Apr-2023 00:00	0861_SD026_230419	✓	✓
EB2312057-002	18-Apr-2023 00:00	0861_SD040_230418	✓	✓
EB2312057-003	19-Apr-2023 00:00	0861_SD043_230419	✓	✓
EB2312057-004	18-Apr-2023 00:00	0861_SD045_230418	✓	✓
EB2312057-005	18-Apr-2023 00:00	0861_SD098_230418	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2312057-006	18-Apr-2023 00:00	0861_SW098_230418	✓
EB2312057-007	18-Apr-2023 00:00	0861_SW045_230418	✓
EB2312057-008	18-Apr-2023 00:00	0861_SW040_230418	✓
EB2312057-009	19-Apr-2023 00:00	0861_SW026_230419	✓
EB2312057-010	19-Apr-2023 00:00	0861_SW043_230419	✓
EB2312057-011	19-Apr-2023 00:00	0861_MW057S_230419	✓
EB2312057-012	19-Apr-2023 00:00	0861_MW057I_230419	✓
EB2312057-013	18-Apr-2023 00:00	0861_MW056I_230418	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

CERTIFICATE OF ANALYSIS

Work Order	: **EB2312057**	Page	: 1 of 9
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 21-Apr-2023 14:31
Order number	: 60612563 3.1	Date Analysis Commenced	: 22-Apr-2023
C-O-C number	: ----	Issue Date	: 19-May-2023 16:57
Sampler	: [redacted]		
Site	: OFF_SITE 1		
Quote number	: SY/139/19 v4 60612563_2.1		
No. of samples received	: 13		
No. of samples analysed	: 13		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]		Brisbane Organics, Stafford, QLD Brisbane Inorganics, Stafford, QLD Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X PFAS: The LOR for PFOS for sample '0861_SD043_230419' (EB2312057_003) has been raised due to matrix interference.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment 19/05/2023: This report has been amended to alter the project reference code. All analysis results are as per the previous report.
- EP231X PFAS: High LCS recoveries deemed acceptable as associated sample analyte results are less then the limit of reporting.
- EP231X PFAS: Sample "0861_SD026_230419"(EB2312057-001) shows poor matrix spike recovery. Confirmed by re-extraction and re-analysis.
- EP231X PFAS: Sample ‘0861_SD045_230418’ (EB2312057-004) required dilution prior to analysis due to matrix interference. LOR values have been adjusted accordingly.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0861_SD026_230419	0861_SD040_230418	0861_SD043_230419	0861_SD045_230418	0861_SD098_230418
			Sampling date / time	19-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	EB2312057-001	EB2312057-002	EB2312057-003	EB2312057-004	EB2312057-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**42.7**	**27.0**	**35.5**	**48.3**	**25.8**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0002**	**0.0003**	<0.0002	**0.0002**	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0053**	**0.0032**	<0.0006	**0.0082**	**0.0010**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	**0.0005**	<0.0002	<0.0002	**0.0013**	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	**0.0003**	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0006	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0006	<0.0005

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD026_230419	0861_SD040_230418	0861_SD043_230419	0861_SD045_230418	0861_SD098_230418
				Sampling date / time	19-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312057-001	EB2312057-002	EB2312057-003	EB2312057-004	EB2312057-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0006	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0006	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0006	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0060**	**0.0035**	<0.0002	**0.0100**	**0.0010**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0055**	**0.0035**	<0.0002	**0.0084**	**0.0010**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0055**	**0.0035**	<0.0002	**0.0084**	**0.0010**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**100**	**104**	**126**	**114**	**112**
13C8-PFOA	----	0.0002	%		**100**	**100**	**99.5**	**108**	**102**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW098_230418	0861_SW045_230418	0861_SW040_230418	0861_SW026_230419	0861_SW043_230419
				Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312057-006	EB2312057-007	EB2312057-008	EB2312057-009	EB2312057-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.05**	**0.04**	**0.05**	**0.04**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.12**	**0.05**	**0.10**	**0.09**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW098_230418	0861_SW045_230418	0861_SW040_230418	0861_SW026_230419	0861_SW043_230419
				Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312057-006	EB2312057-007	EB2312057-008	EB2312057-009	EB2312057-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.17**	**0.09**	**0.15**	**0.13**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.17**	**0.09**	**0.15**	**0.13**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.17**	**0.09**	**0.15**	**0.13**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**113**	**114**	**119**	**116**	**123**
13C8-PFOA	----	0.02	%		**113**	**114**	**113**	**114**	**115**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW057S_230419	0861_MW057I_230419	0861_MW056I_230418	----	----
				Sampling date / time	19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2312057-011	EB2312057-012	EB2312057-013	--------	--------
					Result	Result	Result	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.28**	<0.02	<0.02	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.21**	<0.02	<0.02	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.97**	<0.01	**0.01**	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.02**	<0.02	<0.02	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.28**	<0.01	<0.01	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.1**	<0.1	<0.1	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.04**	<0.02	<0.02	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.19**	<0.02	<0.02	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.03**	<0.02	<0.02	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.06**	<0.01	<0.01	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW057S_230419	0861_MW057I_230419	0861_MW056I_230418	----	----
				Sampling date / time	19-Apr-2023 00:00	19-Apr-2023 00:00	18-Apr-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2312057-011	EB2312057-012	EB2312057-013	--------	--------
					Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**2.18**	<0.01	**0.01**	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**1.25**	<0.01	**0.01**	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**1.95**	<0.01	**0.01**	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**112**	**119**	**117**	----	----
13C8-PFOA	----	0.02	%		**112**	**117**	**118**	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EB2312057**	Page	: 1 of 9
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 21-Apr-2023
Order number	: 60612563 3.1	Date Analysis Commenced	: 22-Apr-2023
C-O-C number	: ----	Issue Date	: 19-May-2023
Sampler	: [redacted]		
Site	: OFF_SITE 1		
Quote number	: SY/139/19 v4 60612563_2.1		
No. of samples received	: 13		
No. of samples analysed	: 13		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]		Brisbane Organics, Stafford, QLD Brisbane Inorganics, Stafford, QLD Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5009042)									
EB2312057-001	0861_SD026_230419	EA055: Moisture Content	----	0.1	%	42.7	43.6	2.1	0% - 20%
EB2312082-026	Anonymous	EA055: Moisture Content	----	0.1	%	32.6	32.4	0.3	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5009041)									
EB2312029-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0099	<0.0099	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0208	<0.0208	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.346	0.284	19.7	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.143	0.122	15.6	0% - 50%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	7.22	6.55	9.7	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0099	<0.0099	0.0	No Limit
EB2312082-025	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0005	0.0008	47.8	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5009041)									
EB2312029-002	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0130	0.0117	10.4	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0351	0.0351	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0104	0.0117	11.9	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0520	0.0507	2.4	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	0.138	0.126	8.8	0% - 50%
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0099	<0.0099	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0260	0.0286	9.6	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0099	<0.0099	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5009041) - continued									
EB2312029-002	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0099	<0.0099	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0248	<0.0248	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.050	<0.050	0.0	No Limit
EB2312082-025	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5009041)									
EB2312029-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0099	<0.0099	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0099	<0.0099	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0099	<0.0099	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0248	<0.0248	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0248	<0.0248	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0248	<0.0248	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0248	<0.0248	0.0	No Limit
EB2312082-025	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5009041)									
EB2312029-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0099	<0.0099	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	0.0260	0.0325	22.3	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0099	0.0117	16.6	No Limit
EB2312082-025	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5012415)									
EB2311942-003	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.12	0.12	0.0	0% - 50%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5012415)									
EB2311942-003	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5012415)									
EB2311942-003	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5012415) - continued									
EB2311942-003	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5012415)									
EB2311942-003	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5012415)									
EB2311942-003	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.20	0.20	0.0	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.14	0.14	0.0	0% - 50%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.17	0.17	0.0	0% - 50%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5009041)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	119	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	118	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	115	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	121	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	109	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	115	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5009041)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	110	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	119	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	116	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	122	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	117	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	123	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	118	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	121	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	123	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	128	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	125	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5009041)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	126	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	125	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	124	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	116	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	120	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	125	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	131	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5009041)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5009041) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	93.2	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	104	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	108	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	110	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5012415)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	122	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	116	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	128	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	132	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	133	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	122	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5012415)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	120	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	124	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	129	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	129	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	122	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	125	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	128	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	132	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	120	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	133	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	123	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5012415)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	133	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	122	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	66.8	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	121	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	113	62.6	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5012415) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	# 137	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	127	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5012415)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	109	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	140	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	135	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	# 141	64.2	133
EP231P: PFAS Sums (QCLot: 5012415)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5009041)							
EB2312057-001	0861_SD026_230419	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	103	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	# 124	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	91.1	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	108	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# 12.6	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	87.9	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5009041)							
EB2312057-001	0861_SD026_230419	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	94.3	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	105	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	89.6	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	95.2	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	89.6	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	117	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	133	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	127	64.0	136

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5009041) - continued							
EB2312057-001	0861_SD026_230419	EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	118	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	# 210	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	98.1	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5009041)							
EB2312057-001	0861_SD026_230419	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	109	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	# 145	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	101	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	92.8	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	97.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	100	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	109	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5009041)							
EB2312057-001	0861_SD026_230419	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	116	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	112	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	130	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	90.4	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2312057**	Page	: 1 of 6
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 21-Apr-2023
Site	: OFF_SITE 1	Issue Date	: 19-May-2023
Sampler	: [redacted]	No. of samples received	: 13
Order number	: 60612563 3.1	No. of samples analysed	: 13

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2312057--001	0861_SD026_230419	**Perfluoropentane sulfonic acid (PFPeS)**	2706-91-4	124 %	73.0-123%	**Recovery greater than upper data quality objective**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2312057--001	0861_SD026_230419	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	12.6 %	68.0-136%	**Recovery less than lower data quality objective**
EP231B: Perfluoroalkyl Carboxylic Acids	EB2312057--001	0861_SD026_230419	**Perfluorotridecanoic acid (PFTrDA)**	72629-94-8	210 %	66.0-139%	**Recovery greater than upper data quality objective**
EP231C: Perfluoroalkyl Sulfonamides	EB2312057--001	0861_SD026_230419	**N-Methyl perfluorooctane sulfonamide (MeFOSA)**	31506-32-8	145 %	70.0-130%	**Recovery greater than upper data quality objective**

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP231C: Perfluoroalkyl Sulfonamides	QC-5012415-002	----	**N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)**	2355-31-9	137 %	65.0-136%	**Recovery greater than upper control limit**
EP231D: (n:2) Fluorotelomer Sulfonic Acids	QC-5012415-002	----	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	141 %	64.2-133%	**Recovery greater than upper control limit**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	18	5.56	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	18	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) 0861_SD040_230418, 0861_SD045_230418, 0861_SD098_230418	**18-Apr-2023**	**----**	----	**----**	**24-Apr-2023**	02-May-2023	✓
HDPE Soil Jar (EA055) 0861_SD026_230419, 0861_SD043_230419	**19-Apr-2023**	**----**	----	**----**	**24-Apr-2023**	03-May-2023	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD040_230418, 0861_SD045_230418, 0861_SD098_230418	**18-Apr-2023**	**27-Apr-2023**	15-Oct-2023	✓	**02-May-2023**	06-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD026_230419, 0861_SD043_230419	**19-Apr-2023**	**27-Apr-2023**	16-Oct-2023	✓	**02-May-2023**	06-Jun-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0861_SD040_230418, 0861_SD045_230418, 0861_SD098_230418	**18-Apr-2023**	**27-Apr-2023**	15-Oct-2023	✓	**02-May-2023**	06-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD026_230419, 0861_SD043_230419	**19-Apr-2023**	**27-Apr-2023**	16-Oct-2023	✓	**02-May-2023**	06-Jun-2023	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0861_SD040_230418, 0861_SD045_230418, 0861_SD098_230418	**18-Apr-2023**	**27-Apr-2023**	15-Oct-2023	✓	**02-May-2023**	06-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD026_230419, 0861_SD043_230419	**19-Apr-2023**	**27-Apr-2023**	16-Oct-2023	✓	**02-May-2023**	06-Jun-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD040_230418, 0861_SD045_230418, 0861_SD098_230418	**18-Apr-2023**	**27-Apr-2023**	15-Oct-2023	✓	**02-May-2023**	06-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD026_230419, 0861_SD043_230419	**19-Apr-2023**	**27-Apr-2023**	16-Oct-2023	✓	**02-May-2023**	06-Jun-2023	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0861_SD040_230418, 0861_SD045_230418, 0861_SD098_230418	**18-Apr-2023**	**27-Apr-2023**	15-Oct-2023	✓	**02-May-2023**	06-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD026_230419, 0861_SD043_230419	**19-Apr-2023**	**27-Apr-2023**	16-Oct-2023	✓	**02-May-2023**	06-Jun-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_SW098_230418, 0861_SW045_230418, 0861_SW040_230418, 0861_MW056I_230418	**18-Apr-2023**	**27-Apr-2023**	15-Oct-2023	✓	**28-Apr-2023**	15-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW026_230419, 0861_SW043_230419, 0861_MW057S_230419, 0861_MW057I_230419	**19-Apr-2023**	**27-Apr-2023**	16-Oct-2023	✓	**28-Apr-2023**	16-Oct-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0861_SW098_230418, 0861_SW045_230418, 0861_SW040_230418, 0861_MW056I_230418	**18-Apr-2023**	**27-Apr-2023**	15-Oct-2023	✓	**28-Apr-2023**	15-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW026_230419, 0861_SW043_230419, 0861_MW057S_230419, 0861_MW057I_230419	**19-Apr-2023**	**27-Apr-2023**	16-Oct-2023	✓	**28-Apr-2023**	16-Oct-2023	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0861_SW098_230418, 0861_SW045_230418, 0861_SW040_230418, 0861_MW056I_230418	**18-Apr-2023**	**27-Apr-2023**	15-Oct-2023	✓	**28-Apr-2023**	15-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW026_230419, 0861_SW043_230419, 0861_MW057S_230419, 0861_MW057I_230419	**19-Apr-2023**	**27-Apr-2023**	16-Oct-2023	✓	**28-Apr-2023**	16-Oct-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_SW098_230418, 0861_SW045_230418, 0861_SW040_230418, 0861_MW056I_230418	**18-Apr-2023**	**27-Apr-2023**	15-Oct-2023	✓	**28-Apr-2023**	15-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW026_230419, 0861_SW043_230419, 0861_MW057S_230419, 0861_MW057I_230419	**19-Apr-2023**	**27-Apr-2023**	16-Oct-2023	✓	**28-Apr-2023**	16-Oct-2023	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0861_SW098_230418, 0861_SW045_230418, 0861_SW040_230418, 0861_MW056I_230418	**18-Apr-2023**	**27-Apr-2023**	15-Oct-2023	✓	**28-Apr-2023**	15-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW026_230419, 0861_SW043_230419, 0861_MW057S_230419, 0861_MW057I_230419	**19-Apr-2023**	**27-Apr-2023**	16-Oct-2023	✓	**28-Apr-2023**	16-Oct-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	18	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2312062**		
Amendment	: **3**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0861_PFASOMP_23	Page	: 1 of 6
Order number	: 60612563 3.1	Quote number	: ES2022AECOMAU0018 (SY/139/19 v4 60612563_2.1)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: BASE		
Sampler	[redacted]		

Dates

Date Samples Received	: 21-Apr-2023 14:31	Issue Date	: 22-May-2023
Client Requested Due Date	: 05-May-2023	Scheduled Reporting Date	: **05-May-2023**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 27.2°C, 28.4°C
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 74 / 74

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***SRN Reissued 03/05/2023: As per email from [redacted] on 03/05/2023, Sample Names amended for ALS Sample #'s 005,015,016,023,024, 033,034,037,043,044,054,055, 062,063,067 and 068.***
- ***SRN Reissued 11/05/2023: Request received from [redacted] on 11/05/2023 to split ALS Sample #'s 023-024 & 031-032 onto separate COA.***
- ***SRN Reissued 19/05/2023: As per email from [redacted] on 19/05/2023, Project ID changed to QLD_0861_PFASOMP_23.***
- ***SRN Reissued 22/05/2023: As per email from [redacted], EB2312062_023 Sample Name amended from 0861_QC108_230417 to 0861_QC108_230418.***
- ***23/04/23*: SRN has been resent to acknowledge improved reporting date. For any further information regarding these adjustments please contact client services at ALSEnviro.Brisbane@alsglobal.com.**
- **Please be advised that extra samples '0861_SW053_230421', '0861_SW064_230421', and '0861_SW079_230421' were received in addition to the samples listed on the COC. These samples have been added to the end of the work order and EP231X analysis has been applied in line with the rest of the samples in the workorder.**
- **Please be advised, some sample IDs provided on the COC (0861_SW027_230417, 0861_SD041_230418, 0861_QC503_230419, 0861_QC603_230419, 0861_SD038_230420, 0861_SD053_230420, 0861_SD079_230420, 0861_SD064_230420, 0861_SD067_230420, 0861_SD080_230420) differ from the ID provided on the sample containers (0861_SD027_230417, 0861_SW041_230418, 0861_QC502_230419, 0861_QC602_230419, 0861_SD038_230421, 0861_SD053_230421, 0861_SD079_230421, 0861_SD064_230421, 0861_SD067_230421, 0861_SD080_230421). ALS will proceed with analysis using the ID provided on the COC. If this is incorrect, or you have any questions, please enquire with Client Services at ALSEnviro.Brisbane@ALSGlobal.com.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).

- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EB2312062-062 : [21-Apr-2023] : 0861_QC500_230418 - 040617
EB2312062-063 : [21-Apr-2023] : 0861_QC501_230418 - 060425

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2312062-001	17-Apr-2023 00:00	0861_SD027_230417	✓	✓
EB2312062-002	17-Apr-2023 00:00	0861_SD011_230417	✓	✓
EB2312062-003	17-Apr-2023 00:00	0861_SD030_230417	✓	✓
EB2312062-004	17-Apr-2023 00:00	0861_SD059_230417	✓	✓
EB2312062-005	17-Apr-2023 00:00	0861_QC107_230417	✓	✓
EB2312062-017	18-Apr-2023 00:00	0861_SD076_230418	✓	✓
EB2312062-018	18-Apr-2023 00:00	0861_SD002_230418	✓	✓
EB2312062-019	18-Apr-2023 00:00	0861_SD037_230418	✓	✓
EB2312062-020	18-Apr-2023 00:00	0861_SD041_230418	✓	✓
EB2312062-021	18-Apr-2023 00:00	0861_SD056_230418	✓	✓
EB2312062-022	18-Apr-2023 00:00	0861_SD003_230418	✓	✓
EB2312062-023	18-Apr-2023 00:00	0861_QC108_230418	✓	✓
EB2312062-024	18-Apr-2023 00:00	0861_QC208_230418	✓	✓
EB2312062-035	19-Apr-2023 00:00	0861_SD099_230419	✓	✓
EB2312062-036	19-Apr-2023 00:00	0861_SD051_230419	✓	✓
EB2312062-037	19-Apr-2023 00:00	0861_SD100_230419	✓	✓
EB2312062-056	21-Apr-2023 00:00	0861_SD038_230420	✓	✓
EB2312062-057	21-Apr-2023 00:00	0861_SD053_230420	✓	✓
EB2312062-058	21-Apr-2023 00:00	0861_SD079_230420	✓	✓
EB2312062-059	21-Apr-2023 00:00	0861_SD064_230420	✓	✓
EB2312062-060	21-Apr-2023 00:00	0861_SD067_230420	✓	✓
EB2312062-061	21-Apr-2023 00:00	0861_SD080_230420	✓	✓
EB2312062-062	21-Apr-2023 00:00	0861_QC500_230418 0...	✓	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2312062-006	17-Apr-2023 00:00	0861_SW011_230417	✓
EB2312062-007	17-Apr-2023 00:00	0861_MW048_230417	✓
EB2312062-008	17-Apr-2023 00:00	0861_MW050_230417	✓
EB2312062-009	17-Apr-2023 00:00	0861_SW027_230417	✓
EB2312062-010	17-Apr-2023 00:00	0861_MW046_230417	✓
EB2312062-011	17-Apr-2023 00:00	0861_SW030_230417	✓
EB2312062-012	17-Apr-2023 00:00	0861_SW059_230417	✓
EB2312062-013	17-Apr-2023 00:00	0861_QC100_230417	✓
EB2312062-014	17-Apr-2023 00:00	0861_QC101_230417	✓
EB2312062-015	17-Apr-2023 00:00	0861_QC300_230417	✓
EB2312062-016	17-Apr-2023 00:00	0861_QC400_230417	✓
EB2312062-025	18-Apr-2023 00:00	0861_SW002_230418	✓
EB2312062-026	18-Apr-2023 00:00	0861_SW076_230418	✓
EB2312062-027	18-Apr-2023 00:00	0861_SW037_230418	✓
EB2312062-028	18-Apr-2023 00:00	0861_SW003_230418	✓
EB2312062-029	18-Apr-2023 00:00	0861_SW041_230418	✓
EB2312062-030	18-Apr-2023 00:00	0861_SW056_230418	✓
EB2312062-031	18-Apr-2023 00:00	0861_QC102_230418	✓
EB2312062-032	18-Apr-2023 00:00	0861_QC103_230418	✓
EB2312062-033	18-Apr-2023 00:00	0861_QC301_230418	✓
EB2312062-034	18-Apr-2023 00:00	0861_QC401_230418	✓
EB2312062-038	19-Apr-2023 00:00	0861_SW099_230419	✓
EB2312062-039	19-Apr-2023 00:00	0861_MW041_230419	✓
EB2312062-040	19-Apr-2023 00:00	0861_SW051_230419	✓
EB2312062-041	19-Apr-2023 00:00	0861_SW100_230419	✓
EB2312062-042	19-Apr-2023 00:00	0861_QC103_230419	✓
EB2312062-043	19-Apr-2023 00:00	0861_QC302_230419	✓
EB2312062-044	19-Apr-2023 00:00	0861_QC402_230419	✓
EB2312062-045	19-Apr-2023 00:00	0861_MW047_230420	✓
EB2312062-046	19-Apr-2023 00:00	0861_MW028_230420	✓
EB2312062-047	19-Apr-2023 00:00	0861_MW037_230420	✓
EB2312062-048	19-Apr-2023 00:00	0861_MW036_230420	✓
EB2312062-049	19-Apr-2023 00:00	0861_MW026_230420	✓
EB2312062-050	19-Apr-2023 00:00	0861_MW029_230420	✓
EB2312062-051	20-Apr-2023 00:00	0861_MW309_230420	✓
EB2312062-052	20-Apr-2023 00:00	0861_MW025_230420	✓
EB2312062-053	20-Apr-2023 00:00	0861_QC104_230420	✓
EB2312062-054	20-Apr-2023 00:00	0861_QC303_230420	✓
EB2312062-055	20-Apr-2023 00:00	0861_QC403_230420	✓
EB2312062-063	21-Apr-2023 00:00	0861_QC501_230418 0...	✓
EB2312062-064	21-Apr-2023 00:00	0861_MW020_230421	✓

			WATER - EP231X PFAS - Full Suite (28 analytes)
EB2312062-065	21-Apr-2023 00:00	0861_MW005_230421	✓
EB2312062-066	21-Apr-2023 00:00	0861_MW007_230421	✓
EB2312062-067	21-Apr-2023 00:00	0861_QC304_230421	✓
EB2312062-068	21-Apr-2023 00:00	0861_QC404_230421	✓
EB2312062-069	21-Apr-2023 00:00	0861_MW012_230421	✓
EB2312062-070	21-Apr-2023 00:00	0861_SW080_230421	✓
EB2312062-071	21-Apr-2023 00:00	0861_SW067_230421	✓
EB2312062-072	21-Apr-2023 00:00	0861_SW053_230421	✓
EB2312062-073	21-Apr-2023 00:00	0861_SW064_230421	✓
EB2312062-074	21-Apr-2023 00:00	0861_SW079_230421	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email
- Chain of Custody (CoC) (COC)	Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email
- EDI Format - ESDAT (ESDAT)	Email

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email
- Chain of Custody (CoC) (COC)	Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email
- EDI Format - ESDAT (ESDAT)	Email

DERP ESDAT REPORTS

- *AU Certificate of Analysis - NATA (COA)	Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email
- Chain of Custody (CoC) (COC)	Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email
- EDI Format - ESDAT (ESDAT)	Email

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email
- A4 - AU Tax Invoice (INV)	Email
- Chain of Custody (CoC) (COC)	Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email
- EDI Format - ESDAT (ESDAT)	Email

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email
- Chain of Custody (CoC) (COC)	Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email
- EDI Format - ESDAT (ESDAT)	Email

CERTIFICATE OF ANALYSIS

Work Order	: **EB2312062-AA**	Page	: 1 of 33
Amendment	: **3**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 21-Apr-2023 14:31
Order number	: 60612563 3.1	Date Analysis Commenced	: 22-Apr-2023
C-O-C number	: ----	Issue Date	: 22-May-2023 16:38
Sampler	: [redacted]		
Site	: BASE		
Quote number	: SY/139/19 v4 60612563_2.1		
No. of samples received	: 70		
No. of samples analysed	: 70		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]		Brisbane Inorganics, Stafford, QLD Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X PFAS: High LCS recovery deemed acceptable as all associated analyte results are less than LOR.
- EP231X PFAS: The LOR for PFHxS and PFOS for samples '0861_SW099_230419' (EB2312062_038) and '0861_MW041_230419' (EB2312062-039) have been raised due to matrix interference.
- EP231X PFAS: Sample '0861_SD003_230418' (EB2312062_022) shows poor duplicate results due to sample heterogeneity.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment 22/05/2023: This report has been amended as a result of misinterpretation of sample identification name for samples EB2312062_023. All analysis results are as per the previous report.
- Amendment 19/05/2023: This report has been amended to alter the project reference code. All analysis results are as per the previous report.
- EP231X PFAS: Samples '0861_SD067_230420' (EB2312062_060) and '0861_SD080_230420' (EB2312062_061) required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly. The LOR for PFUnDA has been raised further due to matrix interference.
- EP231X PFAS: Sample '0861_SD041_230418' (EB2312062_020) required dilution due to the presence of high level contaminants. Surrogate recoveries not determined and LOR values have been adjusted accordingly.
- EP231X PFAS: Particular samples required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly. Particular LORs have been raised further due to additional matrix interferences.
- EP231X PFAS: Whole bottle extraction was not possible for particular samples. Samples required dilution prior to extraction due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- EP231X PFAS: The LOR of PFPeA for sample "0861_SW064_230421"(EB2312062-073) has been raised due to matrix interference.
- EP231X PFAS: Sample '0861_SD011_230417' (EB2312062-002) shows poor matrix spike recovery due to matrix interference. Confirmed by re-extraction and re-analysis.
- EP231X PFAS: The LORs of particular analytes for particular samples have been raised due to sample matrix interferences.
- Amendment 11/05/2023: This report has been amended following the request to report specific samples EB2312062_023, 024, 031 & 032 on a separate COA, received from James Peachey on 11/05/2023.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD027_230417	0861_SD011_230417	0861_SD030_230417	0861_SD059_230417	0861_QC107_230417
				Sampling date / time	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-001	EB2312062-002	EB2312062-003	EB2312062-004	EB2312062-005
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**28.7**	**20.6**	**28.1**	**46.3**	**48.0**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0002**	**0.0006**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0002**	**0.0004**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0004**	**0.0009**	**0.0012**	**0.0015**	**0.0046**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	**0.0004**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0047**	**0.0031**	**0.0089**	**0.0091**	**0.0365**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	**0.0011**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0005**	**0.0009**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	**0.0002**	**0.0002**	**0.0008**	**0.0013**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0002**	**0.0004**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0003**	**0.0007**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	**0.0002**	<0.0002	**0.0005**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD027_230417	0861_SD011_230417	0861_SD030_230417	0861_SD059_230417	0861_QC107_230417
				Sampling date / time	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-001	EB2312062-002	EB2312062-003	EB2312062-004	EB2312062-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0006	<0.0005	<0.0005	<0.0006	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		**0.0005**	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0056**	**0.0042**	**0.0105**	**0.0128**	**0.0474**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0051**	**0.0040**	**0.0101**	**0.0106**	**0.0411**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0051**	**0.0042**	**0.0103**	**0.0126**	**0.0450**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**96.5**	**124**	**136**	**128**	**135**
13C8-PFOA	----	0.0002	%		**104**	**118**	**128**	**128**	**116**

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0861_SD076_230418	0861_SD002_230418	0861_SD037_230418	0861_SD041_230418	0861_SD056_230418
			Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	EB2312062-017	EB2312062-018	EB2312062-019	EB2312062-020	EB2312062-021
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**49.1**	**33.3**	**88.7**	**90.1**	**73.8**
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	**0.0004**	<0.0002	**0.0054**	**0.0098**	**0.0015**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	**0.0003**	<0.0002	**0.0044**	**0.0217**	**0.0016**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	**0.0048**	**0.0006**	**0.0338**	**0.180**	**0.0188**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	**0.0006**	<0.0002	**0.0025**	**0.0296**	**0.0023**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0359**	**0.0133**	**0.146**	**1.62**	**0.168**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	**0.0002**	**0.0003**	**0.0020**	**0.0128**	**0.0030**
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.024	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	**0.0007**	**0.0004**	**0.0037**	<0.0049	**0.0021**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	**0.0008**	**0.0004**	**0.0089**	**0.0168**	**0.0036**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	**0.0003**	<0.0002	**0.0018**	<0.0049	**0.0012**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	**0.0005**	<0.0002	**0.0027**	**0.0177**	**0.0023**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	**0.0002**	**0.0003**	**0.0005**	<0.0049	**0.0004**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	**0.0003**	**0.0005**	**0.0010**	<0.0049	**0.0006**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	**0.0005**	**0.0007**	**0.0006**	<0.0049	**0.0025**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	**0.0009**	**0.0008**	**0.0017**	**0.0054**	**0.0042**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	**0.0006**	**0.0003**	<0.0012	<0.0049	**0.0009**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	**0.0007**	<0.0122	**0.0007**
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	**0.0004**	**0.0054**	**0.0069**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0006	<0.0006	<0.0122	<0.0005

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD076_230418	0861_SD002_230418	0861_SD037_230418	0861_SD041_230418	0861_SD056_230418
				Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-017	EB2312062-018	EB2312062-019	EB2312062-020	EB2312062-021
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0006	<0.0006	<0.0122	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0006	<0.0122	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0006	<0.0122	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0049	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0049	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0049	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0049	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0049	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0049	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0470**	**0.0176**	**0.216**	**1.92**	**0.221**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0407**	**0.0139**	**0.180**	**1.80**	**0.187**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0434**	**0.0147**	**0.202**	**1.84**	**0.198**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**106**	**114**	**96.0**	**Not Determined**	**88.0**
13C8-PFOA	----	0.0002	%		**104**	**114**	**99.0**	**Not Determined**	**102**

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD003_230418	0861_SD099_230419	0861_SD051_230419	0861_SD100_230419	0861_SD038_230420
				Sampling date / time	18-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	21-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-022	EB2312062-035	EB2312062-036	EB2312062-037	EB2312062-056
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**46.9**	**37.6**	**37.0**	**80.1**	**5.1**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		**0.0002**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		**0.0002**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0027**	**0.0003**	<0.0002	**0.0014**	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		**0.0003**	<0.0002	<0.0002	<0.0012	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0268**	**0.0044**	**0.0047**	<0.0177	**0.0008**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		**0.0004**	<0.0002	**0.0004**	<0.0012	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		**0.0003**	<0.0002	<0.0002	**0.0002**	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0004**	<0.0002	<0.0002	**0.0003**	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0012	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0012	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0012	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0004	<0.0002	<0.0012	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		**0.0004**	<0.0002	<0.0002	<0.0012	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		**0.0006**	<0.0002	<0.0002	<0.0012	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0012	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0006	<0.0005	<0.0031	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	**0.0009**	<0.0012	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0006	<0.0005	<0.0031	<0.0005

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD003_230418	0861_SD099_230419	0861_SD051_230419	0861_SD100_230419	0861_SD038_230420
				Sampling date / time	18-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	21-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-022	EB2312062-035	EB2312062-036	EB2312062-037	EB2312062-056
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0006	<0.0005	<0.0031	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0006	<0.0005	<0.0031	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0006	<0.0005	<0.0031	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0012	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0012	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		**0.0323**	**0.0047**	**0.0060**	**0.0019**	**0.0008**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0295**	**0.0047**	**0.0047**	**0.0014**	**0.0008**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0304**	**0.0047**	**0.0047**	**0.0019**	**0.0008**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**100**	**106**	**99.5**	**114**	**100**
13C8-PFOA	----	0.0002	%		**122**	**104**	**99.5**	**114**	**106**

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD053_230420	0861_SD079_230420	0861_SD064_230420	0861_SD067_230420	0861_SD080_230420
				Sampling date / time	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-057	EB2312062-058	EB2312062-059	EB2312062-060	EB2312062-061
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		76.9	94.7	71.3	57.1	45.4
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	0.0201	0.0016	0.0079	0.0021
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		0.0003	0.0248	0.0013	0.0079	0.0022
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		0.0023	0.236	0.0148	0.0658	0.0199
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		0.0003	0.0308	0.0017	0.0052	0.0022
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		0.0219	1.70	0.190	0.320	0.111
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	0.0179	0.0031	0.0071	0.0014
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	0.006	<0.001	<0.002	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	0.0107	0.0013	0.0037	0.0008
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		0.0003	0.0368	0.0019	0.0085	0.0035
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	0.0056	0.0003	0.0006	0.0005
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		0.0003	0.0180	0.0011	0.0016	0.0013
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0016	<0.0002	0.0005	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		0.0002	0.0024	0.0006	0.0006	0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	0.0056	0.0005	0.0013	<0.0004
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		0.0003	0.0096	0.0004	0.0022	0.0010
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		0.0003	0.0026	<0.0002	0.0010	0.0009
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0025	<0.0005	<0.0012	0.0007
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	0.0094	0.0005	0.0023	0.0012
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0025	<0.0005	<0.0012	<0.0005

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0861_SD053_230420	0861_SD079_230420	0861_SD064_230420	0861_SD067_230420	0861_SD080_230420
			Sampling date / time	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	EB2312062-057	EB2312062-058	EB2312062-059	EB2312062-060	EB2312062-061
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0025	<0.0005	<0.0012	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0025	<0.0005	<0.0012	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0025	<0.0005	<0.0012	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0010	<0.0002	<0.0005	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0010	<0.0002	<0.0005	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0010	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0010	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	**0.0038**	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0014	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0262**	**2.14**	**0.219**	**0.436**	**0.149**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0242**	**1.94**	**0.205**	**0.386**	**0.131**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0248**	**2.04**	**0.211**	**0.408**	**0.139**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**106**	**113**	**107**	**87.5**	**101**
13C8-PFOA	----	0.0002	%	**107**	**103**	**121**	**97.5**	**100**

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_QC500_230418 040617	----	----	----	----
				Sampling date / time	21-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EB2312062-062	--------	--------	--------	--------	
				Result	----	----	----	----	
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%	**0.2**	----	----	----	----	
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	----	----	----	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	----	----	----	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	----	----	----	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	----	----	----	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	----	----	----	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	----	----	----	----	
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	----	----	----	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	----	----	----	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	----	----	----	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	----	----	----	----	
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	----	----	----	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	----	----	----	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	----	----	----	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	----	----	----	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	----	----	----	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	----	----	----	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	----	----	----	----	
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	----	----	----	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	----	----	----	----	

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_QC500_230418 040617	----	----	----	----
				Sampling date / time	21-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2312062-062	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**93.5**	----	----	----	----
13C8-PFOA	----	0.0002	%		**108**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW011_230417	0861_MW048_230417	0861_MW050_230417	0861_SW027_230417	0861_MW046_230417
				Sampling date / time	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-006	EB2312062-007	EB2312062-008	EB2312062-009	EB2312062-010
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.28**	**0.39**	**0.04**	**0.03**	**4.42**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.31**	**0.45**	**0.02**	**0.03**	**4.85**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**3.15**	**2.97**	**0.13**	**0.26**	**34.2**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.16**	**0.16**	<0.02	<0.02	**3.78**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**6.57**	**5.66**	**0.22**	**0.77**	**87.1**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.1**	<0.1	<0.1	<0.1	**5.5**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.21**	**0.14**	<0.02	**0.02**	**12.5**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.62**	**0.45**	<0.02	**0.07**	**16.9**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.10**	**0.08**	<0.02	<0.02	**3.90**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.16**	**0.12**	<0.01	**0.02**	**7.75**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	**0.25**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.62
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.62
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.62

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW011_230417	0861_MW048_230417	0861_MW050_230417	0861_SW027_230417	0861_MW046_230417
				Sampling date / time	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-006	EB2312062-007	EB2312062-008	EB2312062-009	EB2312062-010
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.62
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.62
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.25
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**13.9**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	**0.80**
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.25
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**11.7**	**10.4**	**0.41**	**1.20**	**196**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**9.72**	**8.63**	**0.35**	**1.03**	**121**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**11.2**	**9.81**	**0.39**	**1.17**	**187**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.5**	**89.2**	**97.2**	**83.9**	**93.8**
13C8-PFOA	----	0.02	%		**97.6**	**100**	**100**	**100**	**98.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW030_230417	0861_SW059_230417	0861_QC100_230417	0861_QC101_230417	0861_QC300_230417
				Sampling date / time	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-011	EB2312062-012	EB2312062-013	EB2312062-014	EB2312062-015
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.16**	**0.44**	**0.04**	**0.39**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.16**	**0.38**	**0.02**	**0.39**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**1.35**	**2.28**	**0.12**	**2.19**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.09**	**0.10**	<0.02	**0.10**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**2.52**	**2.66**	**0.22**	**2.59**	**0.02**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.1**	**0.3**	<0.1	**0.3**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.31**	**0.68**	<0.02	**0.62**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.43**	**0.89**	**0.02**	**0.86**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.11**	**0.16**	<0.02	**0.18**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.13**	**0.23**	<0.01	**0.22**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.02**	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW030_230417	0861_SW059_230417	0861_QC100_230417	0861_QC101_230417	0861_QC300_230417
				Sampling date / time	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00	17-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-011	EB2312062-012	EB2312062-013	EB2312062-014	EB2312062-015
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.37**	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**5.75**	**8.12**	**0.42**	**7.84**	**0.02**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**3.87**	**4.94**	**0.34**	**4.78**	**0.02**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**5.48**	**7.64**	**0.40**	**7.35**	**0.02**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**84.1**	**85.7**	**95.4**	**95.6**	**104**
13C8-PFOA	----	0.02	%		**101**	**97.5**	**99.7**	**102**	**100**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC400_230417	0861_SW002_230418	0861_SW076_230418	0861_SW037_230418	0861_SW003_230418
				Sampling date / time	17-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-016	EB2312062-025	EB2312062-026	EB2312062-027	EB2312062-028
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.03**	**0.39**	**0.54**	**0.16**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.03**	**0.34**	**0.52**	**0.13**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	**0.15**	**1.83**	**2.57**	**0.84**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**0.10**	**0.13**	**0.05**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**0.33**	**1.93**	**1.73**	**1.47**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	**0.2**	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.17**	**0.46**	**0.24**	**0.20**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.12**	**0.78**	**0.69**	**0.33**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.05**	**0.18**	**0.13**	**0.08**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.03**	**0.24**	**0.15**	**0.10**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC400_230417	0861_SW002_230418	0861_SW076_230418	0861_SW037_230418	0861_SW003_230418
				Sampling date / time	17-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-016	EB2312062-025	EB2312062-026	EB2312062-027	EB2312062-028
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	**0.20**	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**0.91**	**6.65**	**6.70**	**3.36**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.48**	**3.76**	**4.30**	**2.31**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.88**	**6.21**	**6.05**	**3.18**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**84.7**	**109**	**100**	**107**	**99.5**
13C8-PFOA	----	0.02	%		**99.0**	**99.3**	**103**	**99.2**	**102**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW041_230418	0861_SW056_230418	0861_QC301_230418	0861_QC401_230418	0861_SW099_230419
				Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-029	EB2312062-030	EB2312062-033	EB2312062-034	EB2312062-038
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.98**	**0.17**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.18**	**0.14**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**8.04**	**0.80**	<0.01	<0.01	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.55**	**0.04**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**8.88**	**1.40**	<0.01	<0.01	<0.05
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.04	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.3**	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.40**	**0.16**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**1.47**	**0.27**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.25**	**0.06**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.45**	**0.08**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.04	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.04	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.04	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.04	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.04	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.10	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.04	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.10	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.10	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW041_230418	0861_SW056_230418	0861_QC301_230418	0861_QC401_230418	0861_SW099_230419
				Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	18-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-029	EB2312062-030	EB2312062-033	EB2312062-034	EB2312062-038
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.10	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.10	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.04	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.04	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**22.5**	**3.12**	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**16.9**	**2.20**	<0.01	<0.01	<0.02
Sum of PFAS (WA DER List)	----	0.01	µg/L		**20.8**	**2.94**	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**96.3**	**114**	**133**	**102**	**109**
13C8-PFOA	----	0.02	%		**106**	**99.3**	**101**	**103**	**99.8**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW041_230419	0861_SW051_230419	0861_SW100_230419	0861_QC103_230419	0861_QC302_230419
				Sampling date / time	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-039	EB2312062-040	EB2312062-041	EB2312062-042	EB2312062-043
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.04**	**0.29**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.25**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.02	**0.04**	**0.14**	**0.90**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	**0.03**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.05	**0.09**	**0.14**	**0.30**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	**0.04**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.15**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	**0.04**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.07**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW041_230419	0861_SW051_230419	0861_SW100_230419	0861_QC103_230419	0861_QC302_230419
				Sampling date / time	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-039	EB2312062-040	EB2312062-041	EB2312062-042	EB2312062-043
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**0.13**	**0.32**	**2.07**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.02	**0.13**	**0.28**	**1.20**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.13**	**0.32**	**1.79**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**114**	**92.3**	**103**	**108**	**102**
13C8-PFOA	----	0.02	%		**97.0**	**95.2**	**95.8**	**98.7**	**103**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC402_230419	0861_MW047_230420	0861_MW028_230420	0861_MW037_230420	0861_MW036_230420
				Sampling date / time	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-044	EB2312062-045	EB2312062-046	EB2312062-047	EB2312062-048
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**1.03**	**1.46**	**2.24**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**1.28**	**2.28**	**2.53**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	**6.55**	**10.2**	**6.26**	**0.02**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.43**	**1.43**	**0.08**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**4.24**	**16.2**	**0.56**	**0.01**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**0.4**	**0.3**	**0.2**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.60**	**0.46**	**0.41**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**1.44**	**1.96**	**1.83**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.15**	**0.40**	**0.27**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.32**	**0.84**	**0.12**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC402_230419	0861_MW047_230420	0861_MW028_230420	0861_MW037_230420	0861_MW036_230420
				Sampling date / time	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00	19-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-044	EB2312062-045	EB2312062-046	EB2312062-047	EB2312062-048
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**16.4**	**35.5**	**14.5**	**0.03**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**10.8**	**26.4**	**6.82**	**0.03**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**14.7**	**31.8**	**11.9**	**0.03**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**116**	**103**	**107**	**100**	**91.7**
13C8-PFOA	----	0.02	%		**103**	**97.1**	**100**	**99.4**	**97.4**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW026_230420	0861_MW029_230420	0861_MW309_230420	0861_MW025_230420	0861_QC104_230420
				Sampling date / time	19-Apr-2023 00:00	19-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-049	EB2312062-050	EB2312062-051	EB2312062-052	EB2312062-053
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.71**	<0.02	**0.27**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.94**	<0.02	**0.26**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	**5.27**	<0.01	**1.34**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.38**	<0.02	**0.06**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**4.29**	<0.01	**1.03**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**0.2**	<0.1	**0.3**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.21**	<0.02	**0.43**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.88**	<0.02	**0.58**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.16**	<0.02	**0.16**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.26**	<0.01	**0.17**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW026_230420	0861_MW029_230420	0861_MW309_230420	0861_MW025_230420	0861_QC104_230420
				Sampling date / time	19-Apr-2023 00:00	19-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00	20-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-049	EB2312062-050	EB2312062-051	EB2312062-052	EB2312062-053
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**13.3**	<0.01	**4.60**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**9.56**	<0.01	**2.37**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**12.0**	<0.01	**4.28**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**102**	**94.9**	**92.5**	**108**	**102**
13C8-PFOA	----	0.02	%		**95.9**	**101**	**101**	**101**	**99.0**

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	0861_QC303_230420	0861_QC403_230420	0861_QC501_230418 060425	0861_MW020_230421	0861_MW005_230421
				Sampling date / time	20-Apr-2023 00:00	20-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00
					EB2312062-054	EB2312062-055	EB2312062-063	EB2312062-064	EB2312062-065
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	**4.36**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	**5.78**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	**46.8**	**0.05**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	**3.69**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	**87.1**	**0.03**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.10	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	**2.1**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	**7.27**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	**12.1**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	**4.19**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	**5.59**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	**0.64**	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.10	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.10	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.10	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.10	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.24	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.10	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.24	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.24	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC303_230420	0861_QC403_230420	0861_QC501_230418 060425	0861_MW020_230421	0861_MW005_230421
				Sampling date / time	20-Apr-2023 00:00	20-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-054	EB2312062-055	EB2312062-063	EB2312062-064	EB2312062-065
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.24	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.24	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.10	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.10	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.10	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	**0.88**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.10	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.10	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	**180**	**0.08**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	**134**	**0.08**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	**170**	**0.08**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**99.6**	**97.0**	**99.2**	**96.9**	**97.2**
13C8-PFOA	----	0.02	%		**97.5**	**98.9**	**97.0**	**98.9**	**97.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW007_230421	0861_QC304_230421	0861_QC404_230421	0861_MW012_230421	0861_SW080_230421
				Sampling date / time	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-066	EB2312062-067	EB2312062-068	EB2312062-069	EB2312062-070
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.84**	<0.02	<0.02	<0.02	**2.62**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.97**	<0.02	<0.02	<0.02	**2.98**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**13.3**	<0.01	<0.01	**0.02**	**22.0**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.80**	<0.02	<0.02	<0.02	**1.32**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**8.88**	<0.01	<0.01	**0.04**	**23.9**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**0.4**	<0.1	<0.1	<0.1	**0.5**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**0.67**	<0.02	<0.02	<0.02	**1.16**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**2.85**	<0.02	<0.02	<0.02	**4.24**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.46**	<0.02	<0.02	<0.02	**0.69**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.82**	<0.01	<0.01	<0.01	**1.13**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.06	<0.05	<0.05	<0.05	<0.12
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		**0.09**	<0.02	<0.02	<0.02	<0.05
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.06	<0.05	<0.05	<0.05	<0.12
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.06	<0.05	<0.05	<0.05	<0.12

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW007_230421	0861_QC304_230421	0861_QC404_230421	0861_MW012_230421	0861_SW080_230421
				Sampling date / time	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312062-066	EB2312062-067	EB2312062-068	EB2312062-069	EB2312062-070
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.06	<0.05	<0.05	<0.05	<0.12
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.06	<0.05	<0.05	<0.05	<0.12
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.05
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		**0.05**	<0.05	<0.05	<0.05	**0.05**
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**32.1**	<0.01	<0.01	**0.06**	**60.6**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**22.2**	<0.01	<0.01	**0.06**	**45.9**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**29.3**	<0.01	<0.01	**0.06**	**56.3**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**101**	**100**	**98.6**	**103**	**101**
13C8-PFOA	----	0.02	%		**97.0**	**100**	**100**	**96.1**	**99.9**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW067_230421	0861_SW053_230421	0861_SW064_230421	0861_SW079_230421	----
				Sampling date / time	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00	----
Compound	CAS Number	LOR	Unit		EB2312062-071	EB2312062-072	EB2312062-073	EB2312062-074	--------
					Result	Result	Result	Result	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**6.04**	<0.02	**0.18**	**1.09**	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**5.02**	<0.02	**0.12**	**1.15**	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**27.6**	**0.03**	**0.62**	**8.47**	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.82**	<0.02	**0.02**	**0.48**	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**12.5**	**0.02**	**0.65**	**8.34**	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**3.6**	<0.1	<0.1	**0.2**	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**4.03**	<0.02	<0.04	**0.51**	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**6.23**	<0.02	**0.11**	**1.70**	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.51**	<0.02	<0.02	**0.27**	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.56**	<0.01	**0.02**	**0.43**	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.12	<0.05	<0.05	<0.06	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.12	<0.05	<0.05	<0.06	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.12	<0.05	<0.05	<0.06	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW067_230421	0861_SW053_230421	0861_SW064_230421	0861_SW079_230421	----
				Sampling date / time	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00	21-Apr-2023 00:00	----
Compound	CAS Number	LOR	Unit		EB2312062-071	EB2312062-072	EB2312062-073	EB2312062-074	--------
					Result	Result	Result	Result	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.12	<0.05	<0.05	<0.06	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.12	<0.05	<0.05	<0.06	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.05	<0.02	<0.02	<0.02	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**66.9**	**0.05**	**1.72**	**22.6**	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**40.1**	**0.05**	**1.27**	**16.8**	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**61.1**	**0.05**	**1.58**	**21.0**	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.8**	**102**	**94.8**	**97.3**	----
13C8-PFOA	----	0.02	%		**95.0**	**101**	**96.3**	**97.1**	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

CERTIFICATE OF ANALYSIS

Work Order	: **EB2312062-AB**	Page	: 1 of 7
Amendment	: **3**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR JAMES PEACHEY	Contact	: Carsten Emrich
Address	: LEVEL 8 540 WICKHAM STREET FORTITUDE VALLEY 4006	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 07 3553 2000	Telephone	: +61 7 3552 8616
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 21-Apr-2023 14:31
Order number	: 60612563 3.1	Date Analysis Commenced	: 22-Apr-2023
C-O-C number	: ----	Issue Date	: 22-May-2023 16:40
Sampler	: ALAN ARAKKAL		
Site	: BASE		
Quote number	: SY/139/19 v4 60612563_2.1		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Morgan Lennox	Senior Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X PFAS: High LCS recovery deemed acceptable as all associated analyte results are less than LOR.
- EP231X PFAS: The LOR for PFHxS and PFOS for samples '0861_SW099_230419' (EB2312062_038) and '0861_MW041_230419' (EB2312062-039) have been raised due to matrix interference.
- EP231X PFAS: Sample '0861_SD003_230418' (EB2312062_022) shows poor duplicate results due to sample heterogeneity.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment 22/05/2023: This report has been amended as a result of misinterpretation of sample identification name for samples EB2312062_023. All analysis results are as per the previous report.
- Amendment 19/05/2023: This report has been amended to alter the project reference code. All analysis results are as per the previous report.
- EP231X PFAS: Samples '0861_SD067_230420' (EB2312062_060) and '0861_SD080_230420' (EB2312062_061) required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly. The LOR for PFUnDA has been raised further due to matrix interference.
- EP231X PFAS: Sample '0861_SD041_230418' (EB2312062_020) required dilution due to the presence of high level contaminants. Surrogate recoveries not determined and LOR values have been adjusted accordingly.
- EP231X PFAS: Particular samples required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly. Particular LORs have been raised further due to additional matrix interferences.
- EP231X PFAS: Whole bottle extraction was not possible for particular samples. Samples required dilution prior to extraction due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- EP231X PFAS: The LOR of PFPeA for sample "0861_SW064_230421"(EB2312062-073) has been raised due to matrix interference.
- EP231X PFAS: Sample '0861_SD011_230417' (EB2312062-002) shows poor matrix spike recovery due to matrix interference. Confirmed by re-extraction and re-analysis.
- EP231X PFAS: The LORs of particular analytes for particular samples have been raised due to sample matrix interferences.
- Amendment 11/05/2023: This report has been amended following the request to report specific samples EB2312062_023, 024, 031 & 032 on a separate COA, received from James Peachey on 11/05/2023.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_QC108_230418	0861_QC208_230418	----	----	----
				Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2312062-023	EB2312062-024	--------	--------	--------
					Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**23.7**	**22.1**	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0007**	**0.0006**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	----	----	----

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0861_QC108_230418	0861_QC208_230418	----	----	----
			Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EB2312062-023	EB2312062-024	--------	--------	--------
				Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0007**	**0.0006**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0007**	**0.0006**	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0007**	**0.0006**	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**108**	**108**	----	----	----
13C8-PFOA	----	0.0002	%	**104**	**102**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC102_230418	0861_QC103_230418	----	----	----
				Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2312062-031	EB2312062-032	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.45**	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.34**	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.04**	**1.76**	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.09**	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.11**	**1.98**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**0.2**	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.50**	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.81**	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.17**	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.26**	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC102_230418	0861_QC103_230418	----	----	----
				Sampling date / time	18-Apr-2023 00:00	18-Apr-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2312062-031	EB2312062-032	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	**0.17**	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.15**	**6.73**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.15**	**3.74**	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.15**	**6.30**	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.2**	**104**	----	----	----
13C8-PFOA	----	0.02	%		**95.6**	**102**	----	----	----

Surrogate Control Limits

Sub-Matrix: SEDIMENT		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EB2312062-AA**	Page	: 1 of 16
Amendment	: **3**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 21-Apr-2023
Order number	: 60612563 3.1	Date Analysis Commenced	: 22-Apr-2023
C-O-C number	: ----	Issue Date	: 22-May-2023
Sampler	: [redacted]		
Site	: BASE		
Quote number	: SY/139/19 v4 60612563_2.1		
No. of samples received	: 70		
No. of samples analysed	: 70		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
	Senior Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5009471)									
EB2312062-022	0861_SD003_230418	EA055: Moisture Content	----	0.1	%	46.9	50.0	6.3	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5013736)									
EB2312062-001	0861_SD027_230417	EA055: Moisture Content	----	0.1	%	28.7	28.8	0.4	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5017027)									
EB2312062-060	0861_SD067_230420	EA055: Moisture Content	----	0.1	%	57.1	52.2	8.9	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5009470)									
EB2312062-001	0861_SD027_230417	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0047	0.0052	9.1	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2312062-022	0861_SD003_230418	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	0.0002	0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0027	0.0020	32.1	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0003	0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0268	# 0.0198	29.9	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5017026)									
EB2311854-034	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5017026) - continued									
EB2311854-034	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0021	0.0027	25.9	0% - 50%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5009470)									
EB2312062-001	0861_SD027_230417	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2312062-022	0861_SD003_230418	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0003	0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0004	0.0003	44.3	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0006	0.0005	21.6	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5017026)									
EB2311854-034	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5009470)									
EB2312062-001	0861_SD027_230417	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5009470) - continued									
EB2312062-001	0861_SD027_230417	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	0.0005	<0.0002	65.1	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
EB2312062-022	0861_SD003_230418	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5017026)									
EB2311854-034	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5009470)									

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5009470) - continued									
EB2312062-001	0861_SD027_230417	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2312062-022	0861_SD003_230418	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5017026)									
EB2311854-034	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5010624)									
EB2312062-006	0861_SW011_230417	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	3.15	3.07	2.6	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	6.57	6.28	4.6	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.28	0.30	9.8	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.31	0.27	11.9	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.16	0.15	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EB2312062-014	0861_QC101_230417	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	2.19	1.87	15.8	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	2.59	2.50	3.4	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.39	0.44	12.3	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.39	0.33	17.5	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.10	0.08	20.2	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5010624)									
EB2312062-006	0861_SW011_230417	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.16	0.18	9.4	0% - 50%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.21	0.21	0.0	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.62	0.62	0.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.10	0.10	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.1	0.1	0.0	No Limit
EB2312062-014	0861_QC101_230417	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.22	0.24	6.1	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.62	0.51	19.8	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.86	0.76	12.2	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.18	0.18	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.3	0.2	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5010624)									
EB2312062-006	0861_SW011_230417	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2312062-014	0861_QC101_230417	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5010624) - continued									
EB2312062-014	0861_QC101_230417	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5010624)									
EB2312062-006	0861_SW011_230417	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2312062-014	0861_QC101_230417	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5010624)									
EB2312062-006	0861_SW011_230417	EP231X: Sum of PFAS	----	0.01	µg/L	11.7	11.3	3.3	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	9.72	9.35	3.9	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	11.2	10.9	3.0	0% - 20%
EB2312062-014	0861_QC101_230417	EP231X: Sum of PFAS	----	0.01	µg/L	7.84	7.11	9.8	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	4.78	4.37	9.0	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	7.35	6.70	9.3	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5009470)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	128	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	117	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	123	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	124	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	115	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	116	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5017026)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	117	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	112	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	113	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	124	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	108	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	116	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5009470)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	109	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	123	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	122	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	123	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	112	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	124	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	132	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	125	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	118	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	135	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	124	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5017026)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	104	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	109	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	112	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	108	71.0	131

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5017026) - continued								
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	117	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.2	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	113	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	116	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	105	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5009470)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	125	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	143	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	133	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	120	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	132	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	115	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	129	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5017026)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	109	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	108	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	67.3	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	110	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	101	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5009470)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	115	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	128	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	132	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	# 129	54.8	124

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5017026)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	90.2	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	111	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	106	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	119	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5010624)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	110	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	110	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	92.9	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	97.5	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	88.1	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	87.6	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5010626)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	104	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	126	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	108	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	112	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	96.3	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	97.7	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5010628)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	95.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	109	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	107	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	100	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	90.7	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	90.7	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5010624)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	91.2	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	91.0	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	96.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	101	71.0	133

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5010624) - continued								
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	102	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	99.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	100	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	111	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	113	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	100	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5010626)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	97.3	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	96.8	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	104	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	106	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	104	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	103	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	101	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	116	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	117	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	122	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5010628)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	97.9	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	94.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	91.2	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	93.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	102	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	100	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	95.6	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	83.2	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	96.2	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	94.2	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5010624)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	101	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	99.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	109	60.5	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5010624) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	103	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	104	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	104	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	102	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5010626)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	110	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	102	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	108	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	106	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	99.4	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	109	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	111	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5010628)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	110	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	102	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	109	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	104	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	100	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	95.6	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	93.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5010624)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	111	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	103	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	109	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	85.3	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5010626)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5010626) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	98.6	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	88.1	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	106	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	99.4	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5010628)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	102	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	102	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	108	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	102	64.2	133
EP231P: PFAS Sums (QCLot: 5010624)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 5010626)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 5010628)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5009470)							
EB2312062-002	0861_SD011_230417	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	97.7	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	92.7	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	73.3	67.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5009470) - continued							
EB2312062-002	0861_SD011_230417	EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	109	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# 34.8	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	108	59.0	134
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5017026)							
EB2311854-037	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	116	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	119	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	110	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	119	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	111	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	102	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5009470)							
EB2312062-002	0861_SD011_230417	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	106	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	108	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	106	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	106	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	90.0	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	112	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	120	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	110	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	102	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	139	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	112	69.0	133
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5017026)							
EB2311854-037	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	110	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	112	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	113	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	116	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	106	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	115	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	107	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	117	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	115	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	120	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	111	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5009470)							
EB2312062-002	0861_SD011_230417	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	106	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	104	70.0	130

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5009470) - continued							
EB2312062-002	0861_SD011_230417	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	106	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	109	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	108	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	109	61.0	139
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5017026)							
EB2311854-037	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	109	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	114	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	72.6	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	118	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	110	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	104	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	101	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5009470)							
EB2312062-002	0861_SD011_230417	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	100	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	112	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	120	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	84.6	70.0	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5017026)							
EB2311854-037	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	98.7	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	128	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	116	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	112	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5010624)							
EB2312062-007	0861_MW048_230417	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	106	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	88.4	71.0	127

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5010624) - continued							
EB2312062-007	0861_MW048_230417	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	# Not Determined	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	96.0	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	# Not Determined	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	97.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5010624)							
EB2312062-007	0861_MW048_230417	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	87.9	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	91.3	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	89.9	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	100	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	97.7	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	93.4	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	94.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	92.4	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	99.8	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	102	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	97.8	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5010624)							
EB2312062-007	0861_MW048_230417	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	101	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	94.3	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	98.3	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	97.8	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	96.8	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	102	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	91.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5010624)							
EB2312062-007	0861_MW048_230417	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	110	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	97.6	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	122	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	89.0	70.0	130

QUALITY CONTROL REPORT

Work Order	: **EB2312062-AB**	Page	: 1 of 11
Amendment	: **3**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	[redacted]
Telephone	: +[redacted]	Telephone	[redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 21-Apr-2023
Order number	: 60612563 3.1	Date Analysis Commenced	: 22-Apr-2023
C-O-C number	: ----	Issue Date	: 22-May-2023
Sampler	: [redacted]		
Site	: BASE		
Quote number	: SY/139/19 v4 60612563_2.1		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]		Brisbane Inorganics, Stafford, QLD Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5009471)									
EB2312062-022	Anonymous	EA055: Moisture Content	----	0.1	%	46.9	50.0	6.3	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5009470)									
EB2312062-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0047	0.0052	9.1	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2312062-022	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	0.0002	0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0027	0.0020	32.1	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0003	0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0268	# 0.0198	29.9	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5009470)									
EB2312062-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5009470) - continued									
EB2312062-001	Anonymous	EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2312062-022	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0003	0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0004	0.0003	44.3	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0006	0.0005	21.6	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5009470)									
EB2312062-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	0.0005	<0.0002	65.1	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
EB2312062-022	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5009470)									

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5009470) - continued									
EB2312062-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2312062-022	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5010624)									
EB2312062-006	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	3.15	3.07	2.6	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	6.57	6.28	4.6	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.28	0.30	9.8	0% - 50%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.31	0.27	11.9	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.16	0.15	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EB2312062-014	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	2.19	1.87	15.8	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	2.59	2.50	3.4	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.39	0.44	12.3	0% - 20%
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.39	0.33	17.5	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.10	0.08	20.2	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5010624)									
EB2312062-006	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.16	0.18	9.4	0% - 50%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.21	0.21	0.0	0% - 50%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.62	0.62	0.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.10	0.10	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5010624) - continued									
EB2312062-006	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.1	0.1	0.0	No Limit
EB2312062-014	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.22	0.24	6.1	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.62	0.51	19.8	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.86	0.76	12.2	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.18	0.18	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.3	0.2	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5010624)									
EB2312062-006	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2312062-014	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5010624)									
EB2312062-006	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2312062-014	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5010624)									
EB2312062-006	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	11.7	11.3	3.3	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	9.72	9.35	3.9	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	11.2	10.9	3.0	0% - 20%
EB2312062-014	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	7.84	7.11	9.8	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	4.78	4.37	9.0	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	7.35	6.70	9.3	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5009470)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	128	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	117	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	123	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	124	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	115	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	116	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5009470)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	109	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	123	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	122	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	123	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	112	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	124	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	132	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	125	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	118	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	135	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	124	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5009470)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	125	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	143	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	133	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	120	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	132	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	115	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	129	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5009470)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5009470) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	115	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	128	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	132	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	# 129	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5010624)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	110	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	110	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	92.9	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	97.5	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	88.1	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	87.6	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5010624)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	91.2	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	91.0	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	96.4	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	101	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	102	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	99.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	100	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	111	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	113	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	100	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5010624)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	101	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	99.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	109	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	103	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	104	62.6	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5010624) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	104	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	102	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5010624)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	111	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	103	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	109	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	85.3	64.2	133
EP231P: PFAS Sums (QCLot: 5010624)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5009470)							
EB2312062-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	97.7	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	92.7	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	73.3	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	109	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	# 34.8	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	108	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5009470)							
EB2312062-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	106	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	108	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	106	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	106	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	90.0	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	112	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	120	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	110	64.0	136

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5009470) - continued							
EB2312062-002	Anonymous	EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	102	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	139	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	112	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5009470)							
EB2312062-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	106	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	104	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	106	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	109	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	108	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	109	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5009470)							
EB2312062-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	100	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	112	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	120	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	84.6	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5010624)							
EB2312062-007	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	106	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	88.4	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	# Not Determined	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	96.0	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	# Not Determined	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	97.1	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5010624)							
EB2312062-007	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	87.9	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	91.3	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	89.9	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	100	72.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5010624) - continued							
EB2312062-007	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	97.7	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	93.4	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	94.8	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	92.4	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	99.8	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	102	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	97.8	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5010624)							
EB2312062-007	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	101	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	94.3	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	98.3	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	97.8	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	96.8	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	102	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	91.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5010624)							
EB2312062-007	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	110	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	97.6	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	122	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	89.0	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2312062**	Page	: 1 of 12
Amendment	: **3**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Telephone	[redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 21-Apr-2023
Site	: BASE	Issue Date	: 22-May-2023
Sampler	: [redacted]	No. of samples received	: 74
Order number	: 60612563 3.1	No. of samples analysed	: 74

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **Duplicate outliers exist - please see following pages for full details.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2312062--022	0861_SD003_230418	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	29.9 %	0% - 20%	**RPD exceeds LOR based limits**
Laboratory Control Spike (LCS) Recoveries							
EP231D: (n:2) Fluorotelomer Sulfonic Acids	QC-5009470-002	----	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	129 %	54.8-124%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2312062--002	0861_SD011_230417	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	34.8 %	68.0-136%	**Recovery less than lower data quality objective**

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2312062--007	0861_MW048_230417	**Perfluorohexane sulfonic acid (PFHxS)**	355-46-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP231A: Perfluoroalkyl Sulfonic Acids	EB2312062--007	0861_MW048_230417	**Perfluorooctane sulfonic acid (PFOS)**	1763-23-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
	2				
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	2	56	3.57	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	56	1.79	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) 0861_SD059_230417, 0861_QC107_230417	**17-Apr-2023**	**----**	----	----	**24-Apr-2023**	01-May-2023	✓
HDPE Soil Jar (EA055) 0861_SD027_230417, 0861_SD011_230417, 0861_SD030_230417	**17-Apr-2023**	**----**	----	----	**27-Apr-2023**	01-May-2023	✓
HDPE Soil Jar (EA055) 0861_SD076_230418, 0861_SD002_230418, 0861_SD037_230418, 0861_SD041_230418, 0861_SD056_230418, 0861_SD003_230418, 0861_QC108_230418, 0861_QC208_230418	**18-Apr-2023**	**----**	----	----	**24-Apr-2023**	02-May-2023	✓
HDPE Soil Jar (EA055) 0861_SD099_230419, 0861_SD051_230419, 0861_SD100_230419	**19-Apr-2023**	**----**	----	----	**24-Apr-2023**	03-May-2023	✓
HDPE Soil Jar (EA055) 0861_SD038_230420, 0861_SD053_230420, 0861_SD079_230420, 0861_SD064_230420	**21-Apr-2023**	**----**	----	----	**24-Apr-2023**	05-May-2023	✓
HDPE Soil Jar (EA055) 0861_SD067_230420, 0861_SD080_230420, 0861_QC500_230418 - 040617	**21-Apr-2023**	**----**	----	----	**28-Apr-2023**	05-May-2023	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD027_230417, 0861_SD011_230417, 0861_SD030_230417, 0861_SD059_230417, 0861_QC107_230417	**17-Apr-2023**	**26-Apr-2023**	14-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD076_230418, 0861_SD002_230418, 0861_SD037_230418, 0861_SD003_230418, 0861_QC108_230418, 0861_QC208_230418	**18-Apr-2023**	**26-Apr-2023**	15-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD041_230418, 0861_SD056_230418	**18-Apr-2023**	**26-Apr-2023**	15-Oct-2023	✓	**29-Apr-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD099_230419, 0861_SD051_230419, 0861_SD100_230419	**19-Apr-2023**	**26-Apr-2023**	16-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD038_230420, 0861_SD053_230420	**21-Apr-2023**	**26-Apr-2023**	18-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD079_230420, 0861_SD064_230420	**21-Apr-2023**	**26-Apr-2023**	18-Oct-2023	✓	**29-Apr-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD067_230420, 0861_SD080_230420, 0861_QC500_230418 - 040617	**21-Apr-2023**	**28-Apr-2023**	18-Oct-2023	✓	**05-May-2023**	07-Jun-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0861_SD027_230417, 0861_SD011_230417, 0861_SD030_230417, 0861_SD059_230417, 0861_QC107_230417	**17-Apr-2023**	**26-Apr-2023**	14-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD076_230418, 0861_SD002_230418, 0861_SD037_230418, 0861_SD003_230418, 0861_QC108_230418, 0861_QC208_230418	**18-Apr-2023**	**26-Apr-2023**	15-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD041_230418, 0861_SD056_230418	**18-Apr-2023**	**26-Apr-2023**	15-Oct-2023	✓	**29-Apr-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD099_230419, 0861_SD051_230419, 0861_SD100_230419	**19-Apr-2023**	**26-Apr-2023**	16-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD038_230420, 0861_SD053_230420	**21-Apr-2023**	**26-Apr-2023**	18-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD079_230420, 0861_SD064_230420	**21-Apr-2023**	**26-Apr-2023**	18-Oct-2023	✓	**29-Apr-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD067_230420, 0861_SD080_230420, 0861_QC500_230418 - 040617	**21-Apr-2023**	**28-Apr-2023**	18-Oct-2023	✓	**05-May-2023**	07-Jun-2023	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0861_SD027_230417, 0861_SD011_230417, 0861_SD030_230417, 0861_SD059_230417, 0861_QC107_230417	**17-Apr-2023**	**26-Apr-2023**	14-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD076_230418, 0861_SD002_230418, 0861_SD037_230418, 0861_SD003_230418, 0861_QC108_230418, 0861_QC208_230418	**18-Apr-2023**	**26-Apr-2023**	15-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD041_230418, 0861_SD056_230418	**18-Apr-2023**	**26-Apr-2023**	15-Oct-2023	✓	**29-Apr-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD099_230419, 0861_SD051_230419, 0861_SD100_230419	**19-Apr-2023**	**26-Apr-2023**	16-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD038_230420, 0861_SD053_230420	**21-Apr-2023**	**26-Apr-2023**	18-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD079_230420, 0861_SD064_230420	**21-Apr-2023**	**26-Apr-2023**	18-Oct-2023	✓	**29-Apr-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD067_230420, 0861_SD080_230420, 0861_QC500_230418 - 040617	**21-Apr-2023**	**28-Apr-2023**	18-Oct-2023	✓	**05-May-2023**	07-Jun-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD027_230417, 0861_SD011_230417, 0861_SD030_230417, 0861_SD059_230417, 0861_QC107_230417	**17-Apr-2023**	**26-Apr-2023**	14-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD076_230418, 0861_SD002_230418, 0861_SD037_230418, 0861_SD003_230418, 0861_QC108_230418, 0861_QC208_230418	**18-Apr-2023**	**26-Apr-2023**	15-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD041_230418, 0861_SD056_230418	**18-Apr-2023**	**26-Apr-2023**	15-Oct-2023	✓	**29-Apr-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD099_230419, 0861_SD051_230419, 0861_SD100_230419	**19-Apr-2023**	**26-Apr-2023**	16-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD038_230420, 0861_SD053_230420	**21-Apr-2023**	**26-Apr-2023**	18-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD079_230420, 0861_SD064_230420	**21-Apr-2023**	**26-Apr-2023**	18-Oct-2023	✓	**29-Apr-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD067_230420, 0861_SD080_230420, 0861_QC500_230418 - 040617	**21-Apr-2023**	**28-Apr-2023**	18-Oct-2023	✓	**05-May-2023**	07-Jun-2023	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0861_SD027_230417, 0861_SD011_230417, 0861_SD030_230417, 0861_SD059_230417, 0861_QC107_230417	**17-Apr-2023**	**26-Apr-2023**	14-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD076_230418, 0861_SD002_230418, 0861_SD037_230418, 0861_SD003_230418, 0861_QC108_230418, 0861_QC208_230418	**18-Apr-2023**	**26-Apr-2023**	15-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD041_230418, 0861_SD056_230418	**18-Apr-2023**	**26-Apr-2023**	15-Oct-2023	✓	**29-Apr-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD099_230419, 0861_SD051_230419, 0861_SD100_230419	**19-Apr-2023**	**26-Apr-2023**	16-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD038_230420, 0861_SD053_230420	**21-Apr-2023**	**26-Apr-2023**	18-Oct-2023	✓	**05-May-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD079_230420, 0861_SD064_230420	**21-Apr-2023**	**26-Apr-2023**	18-Oct-2023	✓	**29-Apr-2023**	05-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD067_230420, 0861_SD080_230420, 0861_QC500_230418 - 040617	**21-Apr-2023**	**28-Apr-2023**	18-Oct-2023	✓	**05-May-2023**	07-Jun-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_SW011_230417, 0861_MW048_230417, 0861_MW050_230417, 0861_SW027_230417, 0861_MW046_230417, 0861_SW030_230417, 0861_SW059_230417, 0861_QC100_230417, 0861_QC101_230417, 0861_QC300_230417, 0861_QC400_230417	**17-Apr-2023**	**28-Apr-2023**	14-Oct-2023	✓	**29-Apr-2023**	14-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC301_230418, 0861_QC401_230418	**18-Apr-2023**	**28-Apr-2023**	15-Oct-2023	✓	**02-May-2023**	15-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW002_230418, 0861_SW076_230418, 0861_SW037_230418, 0861_SW003_230418, 0861_SW041_230418, 0861_SW056_230418, 0861_QC102_230418, 0861_QC103_230418	**18-Apr-2023**	**28-Apr-2023**	15-Oct-2023	✓	**29-Apr-2023**	15-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW099_230419, 0861_MW041_230419, 0861_SW051_230419, 0861_SW100_230419, 0861_QC103_230419, 0861_QC302_230419, 0861_QC402_230419, 0861_MW047_230420, 0861_MW028_230420, 0861_MW037_230420, 0861_MW036_230420, 0861_MW026_230420, 0861_MW029_230420	**19-Apr-2023**	**28-Apr-2023**	16-Oct-2023	✓	**02-May-2023**	16-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_MW309_230420, 0861_MW025_230420, 0861_QC104_230420, 0861_QC303_230420	**20-Apr-2023**	**28-Apr-2023**	17-Oct-2023	✓	**02-May-2023**	17-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC403_230420	**20-Apr-2023**	**28-Apr-2023**	17-Oct-2023	✓	**04-May-2023**	17-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC501_230418 - 060425, 0861_MW020_230421, 0861_MW005_230421, 0861_MW007_230421, 0861_QC304_230421, 0861_QC404_230421, 0861_MW012_230421, 0861_SW080_230421, 0861_SW067_230421, 0861_SW053_230421, 0861_SW064_230421, 0861_SW079_230421	**21-Apr-2023**	**28-Apr-2023**	18-Oct-2023	✓	**04-May-2023**	18-Oct-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0861_SW011_230417, 0861_MW048_230417, 0861_MW050_230417, 0861_SW027_230417, 0861_MW046_230417, 0861_SW030_230417, 0861_SW059_230417, 0861_QC100_230417, 0861_QC101_230417, 0861_QC300_230417, 0861_QC400_230417	**17-Apr-2023**	**28-Apr-2023**	14-Oct-2023	✓	**29-Apr-2023**	14-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC301_230418, 0861_QC401_230418	**18-Apr-2023**	**28-Apr-2023**	15-Oct-2023	✓	**02-May-2023**	15-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW002_230418, 0861_SW076_230418, 0861_SW037_230418, 0861_SW003_230418, 0861_SW041_230418, 0861_SW056_230418, 0861_QC102_230418, 0861_QC103_230418	**18-Apr-2023**	**28-Apr-2023**	15-Oct-2023	✓	**29-Apr-2023**	15-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW099_230419, 0861_MW041_230419, 0861_SW051_230419, 0861_SW100_230419, 0861_QC103_230419, 0861_QC302_230419, 0861_QC402_230419, 0861_MW047_230420, 0861_MW028_230420, 0861_MW037_230420, 0861_MW036_230420, 0861_MW026_230420, 0861_MW029_230420	**19-Apr-2023**	**28-Apr-2023**	16-Oct-2023	✓	**02-May-2023**	16-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_MW309_230420, 0861_MW025_230420, 0861_QC104_230420, 0861_QC303_230420	**20-Apr-2023**	**28-Apr-2023**	17-Oct-2023	✓	**02-May-2023**	17-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC403_230420	**20-Apr-2023**	**28-Apr-2023**	17-Oct-2023	✓	**04-May-2023**	17-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC501_230418 - 060425, 0861_MW020_230421, 0861_MW005_230421, 0861_MW007_230421, 0861_QC304_230421, 0861_QC404_230421, 0861_MW012_230421, 0861_SW080_230421, 0861_SW067_230421, 0861_SW053_230421, 0861_SW064_230421, 0861_SW079_230421	**21-Apr-2023**	**28-Apr-2023**	18-Oct-2023	✓	**04-May-2023**	18-Oct-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0861_SW011_230417, 0861_MW048_230417, 0861_MW050_230417, 0861_SW027_230417, 0861_MW046_230417, 0861_SW030_230417, 0861_SW059_230417, 0861_QC100_230417, 0861_QC101_230417, 0861_QC300_230417, 0861_QC400_230417	**17-Apr-2023**	**28-Apr-2023**	14-Oct-2023	✓	**29-Apr-2023**	14-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC301_230418, 0861_QC401_230418	**18-Apr-2023**	**28-Apr-2023**	15-Oct-2023	✓	**02-May-2023**	15-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW002_230418, 0861_SW076_230418, 0861_SW037_230418, 0861_SW003_230418, 0861_SW041_230418, 0861_SW056_230418, 0861_QC102_230418, 0861_QC103_230418	**18-Apr-2023**	**28-Apr-2023**	15-Oct-2023	✓	**29-Apr-2023**	15-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW099_230419, 0861_MW041_230419, 0861_SW051_230419, 0861_SW100_230419, 0861_QC103_230419, 0861_QC302_230419, 0861_QC402_230419, 0861_MW047_230420, 0861_MW028_230420, 0861_MW037_230420, 0861_MW036_230420, 0861_MW026_230420, 0861_MW029_230420	**19-Apr-2023**	**28-Apr-2023**	16-Oct-2023	✓	**02-May-2023**	16-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_MW309_230420, 0861_MW025_230420, 0861_QC104_230420, 0861_QC303_230420	**20-Apr-2023**	**28-Apr-2023**	17-Oct-2023	✓	**02-May-2023**	17-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC403_230420	**20-Apr-2023**	**28-Apr-2023**	17-Oct-2023	✓	**04-May-2023**	17-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC501_230418 - 060425, 0861_MW020_230421, 0861_MW005_230421, 0861_MW007_230421, 0861_QC304_230421, 0861_QC404_230421, 0861_MW012_230421, 0861_SW080_230421, 0861_SW067_230421, 0861_SW053_230421, 0861_SW064_230421, 0861_SW079_230421	**21-Apr-2023**	**28-Apr-2023**	18-Oct-2023	✓	**04-May-2023**	18-Oct-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_SW011_230417, 0861_MW048_230417, 0861_MW050_230417, 0861_SW027_230417, 0861_MW046_230417, 0861_SW030_230417, 0861_SW059_230417, 0861_QC100_230417, 0861_QC101_230417, 0861_QC300_230417, 0861_QC400_230417	**17-Apr-2023**	**28-Apr-2023**	14-Oct-2023	✓	**29-Apr-2023**	14-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC301_230418, 0861_QC401_230418	**18-Apr-2023**	**28-Apr-2023**	15-Oct-2023	✓	**02-May-2023**	15-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW002_230418, 0861_SW076_230418, 0861_SW037_230418, 0861_SW003_230418, 0861_SW041_230418, 0861_SW056_230418, 0861_QC102_230418, 0861_QC103_230418	**18-Apr-2023**	**28-Apr-2023**	15-Oct-2023	✓	**29-Apr-2023**	15-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW099_230419, 0861_MW041_230419, 0861_SW051_230419, 0861_SW100_230419, 0861_QC103_230419, 0861_QC302_230419, 0861_QC402_230419, 0861_MW047_230420, 0861_MW028_230420, 0861_MW037_230420, 0861_MW036_230420, 0861_MW026_230420, 0861_MW029_230420	**19-Apr-2023**	**28-Apr-2023**	16-Oct-2023	✓	**02-May-2023**	16-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_MW309_230420, 0861_MW025_230420, 0861_QC104_230420, 0861_QC303_230420	**20-Apr-2023**	**28-Apr-2023**	17-Oct-2023	✓	**02-May-2023**	17-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC403_230420	**20-Apr-2023**	**28-Apr-2023**	17-Oct-2023	✓	**04-May-2023**	17-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC501_230418 - 060425, 0861_MW020_230421, 0861_MW005_230421, 0861_MW007_230421, 0861_QC304_230421, 0861_QC404_230421, 0861_MW012_230421, 0861_SW080_230421, 0861_SW067_230421, 0861_SW053_230421, 0861_SW064_230421, 0861_SW079_230421	**21-Apr-2023**	**28-Apr-2023**	18-Oct-2023	✓	**04-May-2023**	18-Oct-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0861_SW011_230417, 0861_MW048_230417, 0861_MW050_230417, 0861_SW027_230417, 0861_MW046_230417, 0861_SW030_230417, 0861_SW059_230417, 0861_QC100_230417, 0861_QC101_230417, 0861_QC300_230417, 0861_QC400_230417	**17-Apr-2023**	**28-Apr-2023**	14-Oct-2023	✓	**29-Apr-2023**	14-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC301_230418, 0861_QC401_230418	**18-Apr-2023**	**28-Apr-2023**	15-Oct-2023	✓	**02-May-2023**	15-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW002_230418, 0861_SW076_230418, 0861_SW037_230418, 0861_SW003_230418, 0861_SW041_230418, 0861_SW056_230418, 0861_QC102_230418, 0861_QC103_230418	**18-Apr-2023**	**28-Apr-2023**	15-Oct-2023	✓	**29-Apr-2023**	15-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW099_230419, 0861_MW041_230419, 0861_SW051_230419, 0861_SW100_230419, 0861_QC103_230419, 0861_QC302_230419, 0861_QC402_230419, 0861_MW047_230420, 0861_MW028_230420, 0861_MW037_230420, 0861_MW036_230420, 0861_MW026_230420, 0861_MW029_230420	**19-Apr-2023**	**28-Apr-2023**	16-Oct-2023	✓	**02-May-2023**	16-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_MW309_230420, 0861_MW025_230420, 0861_QC104_230420, 0861_QC303_230420	**20-Apr-2023**	**28-Apr-2023**	17-Oct-2023	✓	**02-May-2023**	17-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC403_230420	**20-Apr-2023**	**28-Apr-2023**	17-Oct-2023	✓	**04-May-2023**	17-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC501_230418 - 060425, 0861_MW020_230421, 0861_MW005_230421, 0861_MW007_230421, 0861_QC304_230421, 0861_QC404_230421, 0861_MW012_230421, 0861_SW080_230421, 0861_SW067_230421, 0861_SW053_230421, 0861_SW064_230421, 0861_SW079_230421	**21-Apr-2023**	**28-Apr-2023**	18-Oct-2023	✓	**04-May-2023**	18-Oct-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	3	23	**13.04**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	30	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	30	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	30	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	30	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	56	**3.57**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	56	**5.36**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	3	56	**5.36**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	56	**1.79**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2312761**		
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0861_PFASOMP_23	Page	: 1 of 4
Order number	: 60612563 3.1	Quote number	: ES2022AECOMAU0018 (SY/139/19 v4 60612563_2.1)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	:		
Sampler	: [redacted]		

Dates

Date Samples Received	: 28-Apr-2023 17:20	Issue Date	: 19-May-2023
Client Requested Due Date	: 10-May-2023	Scheduled Reporting Date	: **10-May-2023**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 13.6°C - Ice present
Receipt Detail	: Medium esky	No. of samples received / analysed	: 52 / 52

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***SRN Reissued 03/05/2023: As per email from [redacted] on 03/05/2023, Sample Names amended for ALS Sample #'s 016-020,024,025,040,050-052. COA Spit for Samples #007,008,011 & 012.***
- ***SRN Reissued 19/05/2023: As per email from [redacted] on 19/05/2023, Project ID changed to QLD_0861_PFASOMP_23.***
- **Please be advised that some samples were not received at the laboratory (denoted SNR on the scanned COC).**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- **Samples '0861_QC205_230426', '0861_QC402_230426', '0861_QC206_230428', and '0861_QC403_230428' have been forwarded to NMI as requested. Please note that this will incur a freight forwarding fee.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

EB2312761-024 : [28-Apr-2023] : 0861_QC502_230426 - 040615
EB2312761-025 : [28-Apr-2023] : 0861_QC503_230426 - 060422

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - EP231X PFAS - Full Suite (28 analytes)
EB2312761-002	26-Apr-2023 00:00	0861_SD021_230426	✓	✓	
EB2312761-007	26-Apr-2023 00:00	0861_SD039_230426	✓	✓	
EB2312761-009	26-Apr-2023 00:00	0861_SD015_230426	✓	✓	
EB2312761-011	26-Apr-2023 00:00	0861_SD025_230426	✓	✓	
EB2312761-013	27-Apr-2023 00:00	0861_SD048_230427	✓	✓	
EB2312761-016	26-Apr-2023 00:00	0861_QC109_230426	✓	✓	
EB2312761-022	27-Apr-2023 00:00	0861_SD033_230427	✓	✓	
EB2312761-024	[28-Apr-2023]	0861_QC502_230426 0...	✓	✓	
EB2312761-025	[28-Apr-2023]	0861_QC503_230426 0...			✓
EB2312761-027	26-Apr-2023 00:00	0861_SD052_230426	✓	✓	
EB2312761-029	26-Apr-2023 00:00	0861_SD049_230426	✓	✓	
EB2312761-032	28-Apr-2023 00:00	0861_SD008_230428	✓	✓	
EB2312761-036	28-Apr-2023 00:00	0861_SD020_230428	✓	✓	
EB2312761-037	28-Apr-2023 00:00	0861_SD009_230428	✓	✓	
EB2312761-040	28-Apr-2023 00:00	0861_SD004_230428	✓	✓	
EB2312761-041	28-Apr-2023 00:00	0861_SD005_230428	✓	✓	
EB2312761-043	28-Apr-2023 00:00	0861_SD034_230428	✓	✓	
EB2312761-045	28-Apr-2023 00:00	0861_SD016_230428	✓	✓	
EB2312761-048	28-Apr-2023 00:00	0861_SD018_230428	✓	✓	
EB2312761-050	28-Apr-2023 00:00	0861_QC110_230428	✓	✓	
EB2312761-051	28-Apr-2023 00:00	0861_QC307_230428			✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2312761-001	26-Apr-2023 00:00	0861_SW021_230426	✓
EB2312761-003	27-Apr-2023 00:00	0861_MW042_230427	✓
EB2312761-004	27-Apr-2023 00:00	0861_MW043_230427	✓
EB2312761-005	26-Apr-2023 00:00	0861_MW006_230426	✓
EB2312761-006	27-Apr-2023 00:00	0861_MW032_230427	✓
EB2312761-008	26-Apr-2023 00:00	0861_SW039_230426	✓
EB2312761-010	26-Apr-2023 00:00	0861_SW015_230426	✓
EB2312761-012	26-Apr-2023 00:00	0861_SW025_230426	✓
EB2312761-014	27-Apr-2023 00:00	0861_SW048_230427	✓
EB2312761-015	26-Apr-2023 00:00	0861_QC105_230426	✓
EB2312761-017	26-Apr-2023 00:00	0861_QC305_230426	✓
EB2312761-018	26-Apr-2023 00:00	0861_QC406_230427	✓
EB2312761-019	27-Apr-2023 00:00	0861_QC405_230426	✓
EB2312761-020	27-Apr-2023 00:00	0861_QC306_230427	✓
EB2312761-021	26-Apr-2023 00:00	0861_MW023_230426	✓
EB2312761-023	27-Apr-2023 00:00	0861_SW008_230427	✓
EB2312761-026	26-Apr-2023 00:00	0861_MW031_230426	✓
EB2312761-028	26-Apr-2023 00:00	0861_SW052_230426	✓
EB2312761-030	26-Apr-2023 00:00	0861_SW049_230426	✓
EB2312761-031	28-Apr-2023 00:00	0861_MW024_230428	✓
EB2312761-033	28-Apr-2023 00:00	0861_MW021_230428	✓
EB2312761-034	28-Apr-2023 00:00	0861_QC106_230428	✓
EB2312761-035	28-Apr-2023 00:00	0861_SW020_230428	✓
EB2312761-038	28-Apr-2023 00:00	0861_SW009_230428	✓
EB2312761-039	28-Apr-2023 00:00	0861_SW004_230428	✓
EB2312761-042	28-Apr-2023 00:00	0861_SW005_230428	✓
EB2312761-044	28-Apr-2023 00:00	0861_SW034_230428	✓
EB2312761-046	28-Apr-2023 00:00	0861_SW016_230428	✓
EB2312761-047	28-Apr-2023 00:00	0861_SW018_230428	✓
EB2312761-049	28-Apr-2023 00:00	0861_MW022_230428	✓
EB2312761-052	28-Apr-2023 00:00	0861_QC407_230428	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- A4 - AU Tax Invoice (INV)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

CERTIFICATE OF ANALYSIS

Work Order	: **EB2312761-AA**	Page	: 1 of 25
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 28-Apr-2023 17:20
Order number	: 60612563 3.1	Date Analysis Commenced	: 02-May-2023
C-O-C number	: ----	Issue Date	: 19-May-2023 17:11
Sampler	: [redacted]		
Site	:		
Quote number	: SY/139/19 v4 60612563_2.1		
No. of samples received	: 48		
No. of samples analysed	: 48		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]		Brisbane Inorganics, Stafford, QLD Brisbane Organics, Stafford, QLD Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment 19/05/2023: This report has been amended to alter the project reference code. All analysis results are as per the previous report.
- EP231X PFAS: Particular samples required dilution due to matrix interferences and the presence of high level contaminants. LOR values have been adjusted accordingly. The LOR values of particular analytes have been further raised due to additional matrix interferences. Surrogate recoveries not determined.
- EP231X PFAS: Sample "0861_SD008_230428"(EB2312761-032) has high moisture content, LOR values have been adjusted accordingly.
- EP231X PFAS: The LOR of PFBS for sample '0861_MW024_230428' (EB2312761-031) has been raised due to matrix interference.
- EP231X PFAS: High matrix spike recovery for sample 'EB2312591-084' deemed acceptable as associated sample analyte results are less than the limit of reporting.
- EP231X PFAS: Whole bottle extraction was not possible for particular samples. Samples required dilution prior to extraction due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- EP231X PFAS: The LOR for 6:2 FTS has been raised in sample '0861_MW032_230427' (EB2312761-006) due to matrix interference.
- Amendment (DD/MM/YYYY): This report has been amended following the request to report specific samples (EB2312761) ALS Samples # 007, 008, 011 & 112 on a separate COA, received from [redacted] via email on 03/05/2023.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD021_230426	0861_SD015_230426	0861_SD048_230427	0861_QC109_230426	0861_SD033_230427
				Sampling date / time	26-Apr-2023 00:00	26-Apr-2023 00:00	27-Apr-2023 00:00	26-Apr-2023 00:00	27-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312761-002	EB2312761-009	EB2312761-013	EB2312761-016	EB2312761-022
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**28.0**	**37.2**	**48.3**	**11.5**	**20.0**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		**0.0011**	<0.0002	**0.0006**	<0.0002	**0.0057**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		**0.0010**	<0.0002	**0.0011**	<0.0002	**0.0119**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0065**	**0.0005**	**0.0159**	<0.0002	**0.105**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		**0.0005**	<0.0002	**0.0025**	<0.0002	**0.0063**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0446**	**0.0057**	**0.137**	**0.0003**	**0.468**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		**0.0028**	<0.0002	<0.0016	<0.0002	<0.0176
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.005
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		**0.0007**	<0.0002	**0.0009**	<0.0002	**0.0067**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0018**	<0.0002	**0.0022**	<0.0002	**0.0174**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		**0.0003**	<0.0002	**0.0006**	<0.0002	**0.0033**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		**0.0007**	<0.0002	**0.0011**	<0.0002	**0.0115**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	**0.0008**	<0.0002	<0.0010
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0010	<0.0002	<0.0010
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		**0.0004**	<0.0002	**0.0016**	<0.0002	**0.0025**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		**0.0003**	<0.0002	**0.0024**	<0.0002	**0.0033**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		**0.0004**	<0.0002	**0.0024**	<0.0002	**0.0023**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0006	**0.0014**	<0.0005	<0.0025
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		**0.0004**	<0.0002	**0.0031**	<0.0002	**0.0182**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0006	<0.0006	<0.0005	<0.0025

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_SD021_230426	0861_SD015_230426	0861_SD048_230427	0861_QC109_230426	0861_SD033_230427
			Sampling date / time	26-Apr-2023 00:00	26-Apr-2023 00:00	27-Apr-2023 00:00	26-Apr-2023 00:00	27-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	EB2312761-002	EB2312761-009	EB2312761-013	EB2312761-016	EB2312761-022
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0006	<0.0006	<0.0005	<0.0025
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0006	<0.0006	<0.0005	<0.0025
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0006	<0.0006	<0.0005	<0.0025
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0010
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0010
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	**0.0032**	<0.0005	<0.0010
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	**0.0007**	<0.0005	<0.0010
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0615**	**0.0062**	**0.178**	**0.0003**	**0.662**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0511**	**0.0062**	**0.153**	**0.0003**	**0.573**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0557**	**0.0062**	**0.162**	**0.0003**	**0.618**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**125**	**112**	**110**	**101**	**Not Determined**
13C8-PFOA	----	0.0002	%	**110**	**112**	**97.5**	**100**	**Not Determined**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_QC502_230426 040615	0861_SD052_230426	0861_SD049_230426	0861_SD008_230428	0861_SD020_230428
				Sampling date / time	[28-Apr-2023]	26-Apr-2023 00:00	26-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312761-024	EB2312761-027	EB2312761-029	EB2312761-032	EB2312761-036
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		<0.1	**40.8**	**61.6**	**89.8**	**56.8**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	**0.0002**	<0.0010	<0.0005
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	**0.0002**	<0.0012	<0.0005
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	**0.0035**	**0.0122**	**0.0006**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	**0.0005**	<0.0020	<0.0005
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	**0.0015**	**0.0604**	**0.250**	<0.0090
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0066	<0.0005
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.002
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0011**	<0.0005
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	**0.0005**	**0.0004**	**0.0028**	<0.0005
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0010**	<0.0005
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	**0.0007**	**0.0026**	<0.0005
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0005**	<0.0005
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0015**	<0.0005
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0015**	<0.0005
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0035**	<0.0005
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0008**	<0.0005
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0006	<0.0005	<0.0006	<0.0013
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0029**	<0.0005
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0006	<0.0005	<0.0006	<0.0013

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_QC502_230426 040615	0861_SD052_230426	0861_SD049_230426	0861_SD008_230428	0861_SD020_230428
				Sampling date / time	[28-Apr-2023]	26-Apr-2023 00:00	26-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312761-024	EB2312761-027	EB2312761-029	EB2312761-032	EB2312761-036
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0006	<0.0005	<0.0006	<0.0013
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0006	<0.0005	<0.0006	<0.0013
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0006	<0.0005	<0.0006	<0.0013
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0005
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	**0.0006**	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	**0.0013**	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	**0.0020**	**0.0659**	**0.282**	**0.0006**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	**0.0015**	**0.0639**	**0.262**	**0.0006**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	**0.0020**	**0.0652**	**0.272**	**0.0006**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**105**	**130**	**105**	**106**	**112**
13C8-PFOA	----	0.0002	%		**103**	**100**	**106**	**108**	**95.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD009_230428	0861_SD004_230428	0861_SD005_230428	0861_SD034_230428	0861_SD016_230428
				Sampling date / time	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312761-037	EB2312761-040	EB2312761-041	EB2312761-043	EB2312761-045
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**58.9**	**64.5**	**66.3**	**38.6**	**47.8**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	**0.0014**	**0.0006**	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0004	<0.0002	<0.0010	**0.0007**	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0038**	<0.0004	**0.0181**	**0.0060**	<0.0004
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0010	<0.0002	<0.0022	**0.0005**	<0.0014
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0687**	**0.0084**	**0.335**	**0.0693**	**0.0045**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0606	<0.107	<0.0034	<0.0002	<0.0032
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.005	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0010	**0.0003**	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		**0.0006**	<0.0002	**0.0029**	**0.0008**	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0010	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0010	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0010	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0010	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0010	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0010	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0010	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0024	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		**0.0007**	**0.0005**	**0.0238**	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0024	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_SD009_230428	0861_SD004_230428	0861_SD005_230428	0861_SD034_230428	0861_SD016_230428
			Sampling date / time	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00
Compound	CAS Number	LOR	Unit	EB2312761-037	EB2312761-040	EB2312761-041	EB2312761-043	EB2312761-045
				Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0024	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0024	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0024	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0010	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0010	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0010	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0010	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0010	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0010	<0.0005	<0.0005
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0738**	**0.0089**	**0.381**	**0.0782**	**0.0045**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0725**	**0.0084**	**0.353**	**0.0753**	**0.0045**
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0731**	**0.0084**	**0.357**	**0.0770**	**0.0045**
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**82.0**	**116**	**Not Determined**	**99.0**	**90.5**
13C8-PFOA	----	0.0002	%	**100**	**98.5**	**Not Determined**	**97.0**	**95.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD018_230428	0861_QC110_230428	----	----	----
				Sampling date / time	28-Apr-2023 00:00	28-Apr-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2312761-048	EB2312761-050	--------	--------	--------
					Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**52.9**	**57.6**	**----**	**----**	**----**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0005	**0.0015**	**----**	**----**	**----**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0005	**0.0015**	**----**	**----**	**----**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0005	**0.0155**	**----**	**----**	**----**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0005	<0.0026	**----**	**----**	**----**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0074**	**0.174**	**----**	**----**	**----**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0005	<0.0024	**----**	**----**	**----**
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.002	<0.001	**----**	**----**	**----**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0005	**0.0006**	**----**	**----**	**----**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0005	**0.0019**	**----**	**----**	**----**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0005	<0.0002	**----**	**----**	**----**
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0005	**0.0006**	**----**	**----**	**----**
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0005	<0.0002	**----**	**----**	**----**
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0005	<0.0002	**----**	**----**	**----**
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0005	<0.0002	**----**	**----**	**----**
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0005	<0.0004	**----**	**----**	**----**
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0005	<0.0002	**----**	**----**	**----**
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0012	<0.0005	**----**	**----**	**----**
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0005	**0.0040**	**----**	**----**	**----**
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0012	<0.0005	**----**	**----**	**----**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_SD018_230428	0861_QC110_230428	----	----	----
			Sampling date / time	28-Apr-2023 00:00	28-Apr-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EB2312761-048	EB2312761-050	--------	--------	--------
				Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0012	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0012	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0012	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0005	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0005	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0074**	**0.200**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0074**	**0.190**	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0074**	**0.194**	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**115**	**104**	----	----	----
13C8-PFOA	----	0.0002	%	**97.5**	**104**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW021_230426	0861_MW042_230427	0861_MW043_230427	0861_MW006_230426	0861_MW032_230427
				Sampling date / time	26-Apr-2023 00:00	27-Apr-2023 00:00	27-Apr-2023 00:00	26-Apr-2023 00:00	27-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312761-001	EB2312761-003	EB2312761-004	EB2312761-005	EB2312761-006
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**1.96**	<0.02	**0.20**	**2.50**	**1.59**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**1.74**	<0.02	**0.07**	**2.25**	**1.53**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**8.68**	**0.02**	**0.30**	**13.2**	**7.86**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**0.38**	<0.02	<0.02	**0.56**	**0.87**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**12.0**	**0.05**	**0.40**	**42.0**	**19.9**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		**1.4**	<0.1	<0.1	**1.0**	**0.7**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**1.87**	<0.02	**0.05**	**2.44**	**0.80**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**3.07**	<0.02	**0.10**	**5.00**	**3.29**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**0.49**	<0.02	<0.02	**0.77**	**0.85**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.82**	<0.01	**0.02**	**0.99**	**1.86**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		**0.09**	<0.02	<0.02	**0.06**	**0.06**
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.06	<0.05	<0.05	<0.12	<0.06
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	**0.13**	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.06	<0.05	<0.05	<0.12	<0.06
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.06	<0.05	<0.05	<0.12	<0.06

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW021_230426	0861_MW042_230427	0861_MW043_230427	0861_MW006_230426	0861_MW032_230427
				Sampling date / time	26-Apr-2023 00:00	27-Apr-2023 00:00	27-Apr-2023 00:00	26-Apr-2023 00:00	27-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312761-001	EB2312761-003	EB2312761-004	EB2312761-005	EB2312761-006
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.06	<0.05	<0.05	<0.12	<0.06
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.06	<0.05	<0.05	<0.12	<0.06
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.05	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	**0.55**	<0.11
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**32.5**	**0.07**	**1.14**	**71.4**	**39.3**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**20.7**	**0.07**	**0.70**	**55.2**	**27.8**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**30.3**	**0.07**	**1.07**	**68.4**	**36.8**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**116**	**102**	**103**	**93.9**	**100**
13C8-PFOA	----	0.02	%		**103**	**100**	**98.5**	**96.9**	**103**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW015_230426	0861_SW048_230427	0861_QC105_230426	0861_QC305_230426	0861_QC406_230427
				Sampling date / time	26-Apr-2023 00:00	27-Apr-2023 00:00	26-Apr-2023 00:00	26-Apr-2023 00:00	26-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312761-010	EB2312761-014	EB2312761-015	EB2312761-017	EB2312761-018
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**0.10**	**0.06**	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**0.11**	**0.05**	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.01**	**0.96**	**0.27**	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.08**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.04**	**2.66**	**0.15**	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**0.09**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**0.29**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**0.05**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**0.10**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW015_230426	0861_SW048_230427	0861_QC105_230426	0861_QC305_230426	0861_QC406_230427
				Sampling date / time	26-Apr-2023 00:00	27-Apr-2023 00:00	26-Apr-2023 00:00	26-Apr-2023 00:00	26-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312761-010	EB2312761-014	EB2312761-015	EB2312761-017	EB2312761-018
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	**0.31**	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.05**	**4.75**	**0.53**	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.05**	**3.62**	**0.42**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.05**	**4.56**	**0.48**	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**96.3**	**98.6**	**105**	**101**	**104**
13C8-PFOA	----	0.02	%		**102**	**105**	**104**	**103**	**104**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC405_230426	0861_QC306_230427	0861_MW023_230426	0861_SW008_230427	0861_QC503_230426 060422
				Sampling date / time	27-Apr-2023 00:00	27-Apr-2023 00:00	26-Apr-2023 00:00	27-Apr-2023 00:00	[28-Apr-2023]
Compound	CAS Number	LOR	Unit		EB2312761-019	EB2312761-020	EB2312761-021	EB2312761-023	EB2312761-025
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.06**	**0.14**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**0.05**	**0.08**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	**0.26**	**0.51**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	**0.03**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	**0.16**	**0.93**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	**0.13**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.23**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	**0.04**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.07**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC405_230426	0861_QC306_230427	0861_MW023_230426	0861_SW008_230427	0861_QC503_230426 060422
				Sampling date / time	27-Apr-2023 00:00	27-Apr-2023 00:00	26-Apr-2023 00:00	27-Apr-2023 00:00	[28-Apr-2023]
Compound	CAS Number	LOR	Unit		EB2312761-019	EB2312761-020	EB2312761-021	EB2312761-023	EB2312761-025
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	**0.05**	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	**0.53**	**2.21**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	**0.42**	**1.44**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	**0.48**	**2.10**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**112**	**107**	**108**	**95.7**	**101**
13C8-PFOA	----	0.02	%		**106**	**103**	**108**	**106**	**101**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW031_230426	0861_SW052_230426	0861_SW049_230426	0861_MW024_230428	0861_MW021_230428
				Sampling date / time	26-Apr-2023 00:00	26-Apr-2023 00:00	26-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312761-026	EB2312761-028	EB2312761-030	EB2312761-031	EB2312761-033
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**0.09**	<0.03	**2.42**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**0.07**	<0.02	**4.75**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	**0.01**	**0.44**	**0.09**	**48.9**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**0.03**	<0.02	**2.20**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**0.02**	**1.06**	**0.07**	**92.8**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<1.2
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**0.07**	<0.02	**1.15**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**0.19**	<0.02	**5.75**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	**0.03**	<0.02	**1.50**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.07**	<0.01	**4.45**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.62
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.62
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.62

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW031_230426	0861_SW052_230426	0861_SW049_230426	0861_MW024_230428	0861_MW021_230428
				Sampling date / time	26-Apr-2023 00:00	26-Apr-2023 00:00	26-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312761-026	EB2312761-028	EB2312761-030	EB2312761-031	EB2312761-033
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.62
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.62
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.25
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.25
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.25
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.25
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.25
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**0.03**	**2.05**	**0.16**	**164**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**0.03**	**1.50**	**0.16**	**142**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**0.03**	**1.95**	**0.16**	**157**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**98.3**	**99.6**	**90.2**	**98.3**	**103**
13C8-PFOA	----	0.02	%		**109**	**104**	**93.6**	**90.3**	**95.9**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC106_230428	0861_SW020_230428	0861_SW009_230428	0861_SW004_230428	0861_SW005_230428
				Sampling date / time	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312761-034	EB2312761-035	EB2312761-038	EB2312761-039	EB2312761-042
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**2.34**	<0.02	<0.02	<0.02	**1.53**
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**4.85**	<0.02	<0.02	<0.02	**1.11**
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**48.2**	**0.03**	**0.02**	**0.02**	**6.22**
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		**2.51**	<0.02	<0.02	<0.02	**0.27**
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**90.7**	**0.05**	**0.04**	**0.03**	**11.4**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.24	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<1.2	<0.1	<0.1	<0.1	**0.5**
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		**1.05**	<0.02	<0.02	<0.02	**0.53**
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**5.71**	<0.02	<0.02	<0.02	**1.41**
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		**1.63**	<0.02	<0.02	<0.02	**0.13**
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**4.36**	<0.01	<0.01	<0.01	**0.25**
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.24	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.24	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.24	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.24	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.24	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.61	<0.05	<0.05	<0.05	<0.06
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.24	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.61	<0.05	<0.05	<0.05	<0.06
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.61	<0.05	<0.05	<0.05	<0.06

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC106_230428	0861_SW020_230428	0861_SW009_230428	0861_SW004_230428	0861_SW005_230428
				Sampling date / time	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312761-034	EB2312761-035	EB2312761-038	EB2312761-039	EB2312761-042
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.61	<0.05	<0.05	<0.05	<0.06
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.61	<0.05	<0.05	<0.05	<0.06
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.24	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.24	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.24	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.24	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.24	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.24	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**161**	**0.08**	**0.06**	**0.05**	**23.4**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**139**	**0.08**	**0.06**	**0.05**	**17.6**
Sum of PFAS (WA DER List)	----	0.01	µg/L		**154**	**0.08**	**0.06**	**0.05**	**22.0**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**102**	**99.7**	**94.1**	**99.1**	**91.4**
13C8-PFOA	----	0.02	%		**101**	**93.2**	**100**	**93.6**	**99.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW034_230428	0861_SW016_230428	0861_SW018_230428	0861_MW022_230428	0861_QC307_230428
				Sampling date / time	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312761-044	EB2312761-046	EB2312761-047	EB2312761-049	EB2312761-051
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	**1.62**	**1.15**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	**1.38**	**1.35**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.02**	**0.02**	**7.66**	**8.16**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	**0.30**	**0.11**	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.04**	**0.04**	**8.47**	**0.79**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.03	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	**0.6**	**0.5**	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**0.68**	**0.27**	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**1.47**	**1.18**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	**0.12**	**0.18**	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	**0.15**	**0.25**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.03	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.03	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.03	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.03	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.03	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.03	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW034_230428	0861_SW016_230428	0861_SW018_230428	0861_MW022_230428	0861_QC307_230428
				Sampling date / time	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00	28-Apr-2023 00:00
Compound	CAS Number	LOR	Unit		EB2312761-044	EB2312761-046	EB2312761-047	EB2312761-049	EB2312761-051
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.06	<0.06	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.03	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.03	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.06**	**0.06**	**22.4**	**13.9**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.06**	**0.06**	**16.1**	**8.95**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.06**	**0.06**	**20.8**	**12.5**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**91.9**	**96.7**	**100**	**102**	**96.3**
13C8-PFOA	----	0.02	%		**94.6**	**97.9**	**90.3**	**97.2**	**98.5**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC407_230428	----	----	----	----
				Sampling date / time	28-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2312761-052	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC407_230428	----	----	----	----
				Sampling date / time	28-Apr-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2312761-052	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**106**	----	----	----	----
13C8-PFOA	----	0.02	%		**95.2**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

CERTIFICATE OF ANALYSIS

Work Order	: **EB2312761-AB**	Page	: 1 of 7
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 28-Apr-2023 17:20
Order number	: 60612563 3.1	Date Analysis Commenced	: 02-May-2023
C-O-C number	: ----	Issue Date	: 19-May-2023 17:12
Sampler	: [redacted]		
Site	:		
Quote number	: SY/139/19 v4 60612563_2.1		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]		Brisbane Inorganics, Stafford, QLD Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment 19/05/2023: This report has been amended to alter the project reference code. All analysis results are as per the previous report.
- EP231X PFAS: Particular samples required dilution due to matrix interferences and the presence of high level contaminants. LOR values have been adjusted accordingly. The LOR values of particular analytes have been further raised due to additional matrix interferences. Surrogate recoveries not determined.
- EP231X PFAS: Sample "0861_SD008_230428"(EB2312761-032) has high moisture content, LOR values have been adjusted accordingly.
- EP231X PFAS: The LOR of PFBS for sample '0861_MW024_230428' (EB2312761-031) has been raised due to matrix interference.
- EP231X PFAS: High matrix spike recovery for sample 'EB2312591-084' deemed acceptable as associated sample analyte results are less than the limit of reporting.
- EP231X PFAS: Whole bottle extraction was not possible for particular samples. Samples required dilution prior to extraction due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- EP231X PFAS: The LOR for 6:2 FTS has been raised in sample '0861_MW032_230427' (EB2312761-006) due to matrix interference.
- Amendment (DD/MM/YYYY): This report has been amended following the request to report specific samples (EB2312761) ALS Samples # 007, 008, 011 & 112 on a separate COA, received from [redacted] via email on 03/05/2023.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_SD039_230426	0861_SD025_230426	----	----	----
			Sampling date / time	26-Apr-2023 00:00	26-Apr-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EB2312761-007	EB2312761-011	--------	--------	--------
				Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**37.6**	**10.4**	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0006	**0.0005**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0006	<0.0005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0006	<0.0005	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_SD039_230426	0861_SD025_230426	----	----	----
			Sampling date / time	26-Apr-2023 00:00	26-Apr-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EB2312761-007	EB2312761-011	--------	--------	--------
				Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0006	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0006	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0006	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	<0.0002	**0.0005**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	**0.0005**	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	**0.0005**	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**115**	**104**	----	----	----
13C8-PFOA	----	0.0002	%	**102**	**96.5**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW039_230426	0861_SW025_230426	----	----	----
				Sampling date / time	26-Apr-2023 00:00	26-Apr-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2312761-008	EB2312761-012	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW039_230426	0861_SW025_230426	----	----	----
				Sampling date / time	26-Apr-2023 00:00	26-Apr-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2312761-008	EB2312761-012	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**102**	**103**	----	----	----
13C8-PFOA	----	0.02	%		**104**	**100**	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EB2312761-AA**	Page	: 1 of 12
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 28-Apr-2023
Order number	: 60612563 3.1	Date Analysis Commenced	: 02-May-2023
C-O-C number	: ----	Issue Date	: 19-May-2023
Sampler	: [redacted]		
Site	:		
Quote number	: SY/139/19 v4 60612563_2.1		
No. of samples received	: 48		
No. of samples analysed	: 48		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD
	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5021142)									
EB2312761-002	0861_SD021_230426	EA055: Moisture Content	----	0.1	%	28.0	26.3	6.3	0% - 20%
EB2312761-032	0861_SD008_230428	EA055: Moisture Content	----	0.1	%	89.8	89.6	0.3	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5021141)									
EB2312761-002	0861_SD021_230426	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0011	0.0012	10.5	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	0.0010	0.0010	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0065	0.0069	6.4	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0005	0.0004	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0446	0.0476	6.6	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0028	0.0028	0.0	0% - 50%
EB2312761-032	0861_SD008_230428	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0010	<0.0012	18.2	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0012	<0.0014	15.4	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0122	0.0142	14.9	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0020	<0.0018	10.5	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.250	0.297	17.3	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0066	<0.0072	8.7	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5021141)									
EB2312761-002	0861_SD021_230426	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0007	0.0008	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0018	0.0020	14.4	0% - 50%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0003	0.0003	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0007	0.0008	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0003	0.0003	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5021141) - continued									
EB2312761-002	0861_SD021_230426	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2312761-032	0861_SD008_230428	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0011	0.0012	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0028	0.0034	18.7	0% - 50%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0010	0.0011	13.9	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0026	0.0029	12.3	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	0.0005	0.0006	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0015	0.0019	25.3	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0015	0.0024	46.9	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0035	0.0044	24.3	0% - 50%
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	0.0008	0.0010	25.6	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0006	0.0008	22.8	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5021141)									
EB2312761-002	0861_SD021_230426	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	0.0004	0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2312761-032	0861_SD008_230428	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	0.0029	0.0041	32.8	0% - 50%
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5021141)									
EB2312761-002	0861_SD021_230426	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2312761-032	0861_SD008_230428	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	0.0006	0.0011	55.5	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	0.0013	0.0026	65.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5023824)									
EB2312591-085	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EB2312761-033	0861_MW021_230428	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	48.9	44.2	10.1	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	92.8	91.0	2.0	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	2.42	2.22	8.6	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	4.75	4.38	8.2	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	2.20	2.08	5.8	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.25	<0.25	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5023824)									
EB2312591-085	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5023824) - continued									
EB2312591-085	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EB2312761-033	0861_MW021_230428	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	4.45	4.42	0.6	0% - 50%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	1.15	1.02	11.5	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	5.75	5.92	3.0	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	1.50	1.45	3.4	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.62	<0.62	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<1.2	<1.2	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5023824)									
EB2312591-085	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2312761-033	0861_MW021_230428	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.62	<0.62	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.62	<0.62	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.62	<0.62	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.62	<0.62	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5023824)									
EB2312591-085	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2312761-033	0861_MW021_230428	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.25	<0.25	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.25	<0.25	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5023824)									
EB2312591-085	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
EB2312761-033	0861_MW021_230428	EP231X: Sum of PFAS	----	0.01	µg/L	164	157	4.5	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	142	135	4.7	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	157	150	4.4	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5021141)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	123	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	117	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	121	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	115	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	121	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	118	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5021141)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	108	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	110	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	124	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	123	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	116	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	127	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	120	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	124	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	123	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	136	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	110	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5021141)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	132	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	133	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	114	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	126	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	125	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	126	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5021141)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5021141) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	109	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	126	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	130	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	124	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5023820)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	99.2	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	98.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	96.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	104	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	112	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	113	53.0	142
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5023824)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	99.6	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	103	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	92.7	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	98.5	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	83.8	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	91.3	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5023820)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	112	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	111	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	89.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	86.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	111	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	104	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	86.2	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	121	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	114	71.0	132
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5023824)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5023824) - continued								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	91.8	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	92.0	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	87.8	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	96.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	88.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	96.0	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	95.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	91.4	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	91.0	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	94.6	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	96.0	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5023820)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	107	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	112	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	89.8	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	100	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	95.7	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	114	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	88.0	61.0	135
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5023824)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	98.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	82.6	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	91.7	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	99.0	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	92.2	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	92.0	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	101	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5023820)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5023820) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	108	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	133	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	111	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	124	64.2	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5023824)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	102	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	106	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	107	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	128	64.2	133
EP231P: PFAS Sums (QCLot: 5023820)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----
EP231P: PFAS Sums (QCLot: 5023824)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5021141)							
EB2312761-007	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	123	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	120	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	108	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	94.6	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	127	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	129	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5021141)							
EB2312761-007	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	98.8	71.0	135

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5021141) - continued							
EB2312761-007	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	106	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	104	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	94.0	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	96.0	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	116	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	102	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	118	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	106	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	124	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	103	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5021141)							
EB2312761-007	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	108	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	102	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	101	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	100	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	122	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	72.0	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5021141)							
EB2312761-007	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	89.7	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	114	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	100	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	123	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5023824)							
EB2312591-084	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	110	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	112	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	98.4	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	104	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	88.4	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	108	53.0	142

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5023824)							
EB2312591-084	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	100	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	95.2	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	92.0	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	99.2	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	99.0	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	104	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	103	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	110	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	98.2	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	104	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	106	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5023824)							
EB2312591-084	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	104	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	94.3	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	98.2	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	95.9	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	101	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	97.2	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	110	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5023824)							
EB2312591-084	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	121	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	128	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	131	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	# 151	70.0	130

QUALITY CONTROL REPORT

Work Order	: **EB2312761-AB**	Page	: 1 of 8
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 28-Apr-2023
Order number	: 60612563 3.1	Date Analysis Commenced	: 02-May-2023
C-O-C number	: ----	Issue Date	: 19-May-2023
Sampler	: [redacted]		
Site	:		
Quote number	: SY/139/19 v4 60612563_2.1		
No. of samples received	: 4		
No. of samples analysed	: 4		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
	Senior Chemist - Organics	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5021142)									
EB2312761-002	Anonymous	EA055: Moisture Content	----	0.1	%	28.0	26.3	6.3	0% - 20%
EB2312761-032	Anonymous	EA055: Moisture Content	----	0.1	%	89.8	89.6	0.3	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5021141)									
EB2312761-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	0.0011	0.0012	10.5	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	0.0010	0.0010	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0065	0.0069	6.4	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	0.0005	0.0004	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0446	0.0476	6.6	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	0.0028	0.0028	0.0	0% - 50%
EB2312761-032	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0010	<0.0012	18.2	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0012	<0.0014	15.4	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0122	0.0142	14.9	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0020	<0.0018	10.5	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.250	0.297	17.3	0% - 20%
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0066	<0.0072	8.7	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5021141)									
EB2312761-002	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0007	0.0008	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0018	0.0020	14.4	0% - 50%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0003	0.0003	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0007	0.0008	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0003	0.0003	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5021141) - continued									
EB2312761-002	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	0.0004	0.0004	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2312761-032	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0011	0.0012	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0028	0.0034	18.7	0% - 50%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0010	0.0011	13.9	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0026	0.0029	12.3	0% - 50%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	0.0005	0.0006	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0015	0.0019	25.3	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	0.0015	0.0024	46.9	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	0.0035	0.0044	24.3	0% - 50%
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	0.0008	0.0010	25.6	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0006	0.0008	22.8	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5021141)									
EB2312761-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	0.0004	0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2312761-032	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	0.0029	0.0041	32.8	0% - 50%
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0006	<0.0006	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5021141)									
EB2312761-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2312761-032	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	0.0006	0.0011	55.5	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	0.0013	0.0026	65.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5021141)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	123	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	117	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	121	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	115	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	121	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	118	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5021141)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	108	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	110	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	124	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	123	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	116	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	127	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	120	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	124	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	123	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	136	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	110	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5021141)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	132	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	133	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	114	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	126	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	125	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	126	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5021141)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5021141) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	109	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	126	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	130	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	124	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5023820)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	99.2	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	98.0	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	96.3	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	104	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	112	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	113	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5023820)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	112	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	111	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	89.6	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	86.4	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	93.4	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	111	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	104	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	86.2	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	121	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	114	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5023820)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	107	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	112	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	89.8	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	100	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	95.7	62.6	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5023820) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	114	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	88.0	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5023820)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	108	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	133	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	111	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	124	64.2	133
EP231P: PFAS Sums (QCLot: 5023820)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5021141)							
EB2312761-007	0861_SD039_230426	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	123	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	120	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	108	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	94.6	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	127	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	129	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5021141)							
EB2312761-007	0861_SD039_230426	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	98.8	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	106	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	104	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	94.0	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	96.0	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	116	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	102	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	118	64.0	136

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5021141) - continued							
EB2312761-007	0861_SD039_230426	EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	106	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	124	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	103	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5021141)							
EB2312761-007	0861_SD039_230426	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	108	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	102	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	101	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	100	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	122	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	72.0	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5021141)							
EB2312761-007	0861_SD039_230426	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	89.7	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	114	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	100	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	123	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2312761**	Page	: 1 of 12
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 28-Apr-2023
Site	:	Issue Date	: 19-May-2023
Sampler	: [redacted]	No. of samples received	: 52
Order number	: 60612563 3.1	No. of samples analysed	: 52

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231D: (n:2) Fluorotelomer Sulfonic Acids	EB2312591--084	Anonymous	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	151 %	70.0-130%	**Recovery greater than upper data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	2	38	5.26	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	1	38	2.63	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) 0861_SD021_230426, 0861_SD039_230426, 0861_SD015_230426, 0861_SD025_230426, 0861_QC109_230426, 0861_SD052_230426, 0861_SD049_230426	**26-Apr-2023**	**----**	----	**----**	**02-May-2023**	10-May-2023	✓
HDPE Soil Jar (EA055) 0861_SD048_230427, 0861_SD033_230427	**27-Apr-2023**	**----**	----	**----**	**02-May-2023**	11-May-2023	✓
HDPE Soil Jar (EA055) 0861_QC502_230426 - 040615, 0861_SD008_230428, 0861_SD020_230428, 0861_SD009_230428, 0861_SD004_230428, 0861_SD005_230428, 0861_SD034_230428, 0861_SD016_230428, 0861_SD018_230428, 0861_QC110_230428	**28-Apr-2023**	**----**	----	**----**	**02-May-2023**	12-May-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD021_230426, 0861_SD039_230426, 0861_SD015_230426, 0861_SD025_230426, 0861_QC109_230426, 0861_SD052_230426, 0861_SD049_230426	**26-Apr-2023**	**02-May-2023**	23-Oct-2023	✓	**04-May-2023**	11-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD048_230427, 0861_SD033_230427	**27-Apr-2023**	**02-May-2023**	24-Oct-2023	✓	**04-May-2023**	11-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_QC502_230426 - 040615, 0861_SD008_230428, 0861_SD020_230428	**28-Apr-2023**	**02-May-2023**	25-Oct-2023	✓	**04-May-2023**	11-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD009_230428, 0861_SD004_230428, 0861_SD005_230428, 0861_SD034_230428, 0861_SD016_230428, 0861_SD018_230428, 0861_QC110_230428	**28-Apr-2023**	**02-May-2023**	25-Oct-2023	✓	**10-May-2023**	11-Jun-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0861_SD021_230426, 0861_SD039_230426, 0861_SD015_230426, 0861_SD025_230426, 0861_QC109_230426, 0861_SD052_230426, 0861_SD049_230426	**26-Apr-2023**	**02-May-2023**	23-Oct-2023	✓	**04-May-2023**	11-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD048_230427, 0861_SD033_230427	**27-Apr-2023**	**02-May-2023**	24-Oct-2023	✓	**04-May-2023**	11-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_QC502_230426 - 040615, 0861_SD008_230428, 0861_SD020_230428	**28-Apr-2023**	**02-May-2023**	25-Oct-2023	✓	**04-May-2023**	11-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD009_230428, 0861_SD004_230428, 0861_SD005_230428, 0861_SD034_230428, 0861_SD016_230428, 0861_SD018_230428, 0861_QC110_230428	**28-Apr-2023**	**02-May-2023**	25-Oct-2023	✓	**10-May-2023**	11-Jun-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0861_SD021_230426, 0861_SD039_230426, 0861_SD015_230426, 0861_SD025_230426, 0861_QC109_230426, 0861_SD052_230426, 0861_SD049_230426	**26-Apr-2023**	**02-May-2023**	23-Oct-2023	✓	**04-May-2023**	11-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD048_230427, 0861_SD033_230427	**27-Apr-2023**	**02-May-2023**	24-Oct-2023	✓	**04-May-2023**	11-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_QC502_230426 - 040615, 0861_SD008_230428, 0861_SD020_230428	**28-Apr-2023**	**02-May-2023**	25-Oct-2023	✓	**04-May-2023**	11-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD009_230428, 0861_SD004_230428, 0861_SD005_230428, 0861_SD034_230428, 0861_SD016_230428, 0861_SD018_230428, 0861_QC110_230428	**28-Apr-2023**	**02-May-2023**	25-Oct-2023	✓	**10-May-2023**	11-Jun-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD021_230426, 0861_SD039_230426, 0861_SD015_230426, 0861_SD025_230426, 0861_QC109_230426, 0861_SD052_230426, 0861_SD049_230426	**26-Apr-2023**	**02-May-2023**	23-Oct-2023	✓	**04-May-2023**	11-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD048_230427, 0861_SD033_230427	**27-Apr-2023**	**02-May-2023**	24-Oct-2023	✓	**04-May-2023**	11-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_QC502_230426 - 040615, 0861_SD008_230428, 0861_SD020_230428	**28-Apr-2023**	**02-May-2023**	25-Oct-2023	✓	**04-May-2023**	11-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD009_230428, 0861_SD004_230428, 0861_SD005_230428, 0861_SD034_230428, 0861_SD016_230428, 0861_SD018_230428, 0861_QC110_230428	**28-Apr-2023**	**02-May-2023**	25-Oct-2023	✓	**10-May-2023**	11-Jun-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) 0861_SD021_230426, 0861_SD039_230426, 0861_SD015_230426, 0861_SD025_230426, 0861_QC109_230426, 0861_SD052_230426, 0861_SD049_230426	**26-Apr-2023**	**02-May-2023**	23-Oct-2023	✓	**04-May-2023**	11-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD048_230427, 0861_SD033_230427	**27-Apr-2023**	**02-May-2023**	24-Oct-2023	✓	**04-May-2023**	11-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_QC502_230426 - 040615, 0861_SD008_230428, 0861_SD020_230428	**28-Apr-2023**	**02-May-2023**	25-Oct-2023	✓	**04-May-2023**	11-Jun-2023	✓
HDPE Soil Jar (EP231X) 0861_SD009_230428, 0861_SD004_230428, 0861_SD005_230428, 0861_SD034_230428, 0861_SD016_230428, 0861_SD018_230428, 0861_QC110_230428	**28-Apr-2023**	**02-May-2023**	25-Oct-2023	✓	**10-May-2023**	11-Jun-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_SW049_230426	**26-Apr-2023**	**03-May-2023**	23-Oct-2023	✓	**08-May-2023**	23-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW021_230426, 0861_MW006_230426, 0861_SW039_230426, 0861_SW015_230426, 0861_SW025_230426, 0861_QC105_230426, 0861_QC305_230426, 0861_QC406_230427, 0861_MW023_230426, 0861_MW031_230426, 0861_SW052_230426	**26-Apr-2023**	**03-May-2023**	23-Oct-2023	✓	**09-May-2023**	23-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_MW042_230427, 0861_MW043_230427, 0861_MW032_230427, 0861_SW048_230427, 0861_QC405_230426, 0861_QC306_230427, 0861_SW008_230427	**27-Apr-2023**	**03-May-2023**	24-Oct-2023	✓	**09-May-2023**	24-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_MW024_230428, 0861_MW021_230428, 0861_QC106_230428, 0861_SW020_230428, 0861_SW009_230428, 0861_SW004_230428, 0861_SW005_230428, 0861_SW034_230428, 0861_SW016_230428, 0861_SW018_230428, 0861_MW022_230428, 0861_QC307_230428, 0861_QC407_230428	**28-Apr-2023**	**03-May-2023**	25-Oct-2023	✓	**08-May-2023**	25-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC503_230426 - 060422	**28-Apr-2023**	**03-May-2023**	25-Oct-2023	✓	**09-May-2023**	25-Oct-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) 0861_SW049_230426	**26-Apr-2023**	**03-May-2023**	23-Oct-2023	✓	**08-May-2023**	23-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW021_230426, 0861_MW006_230426, 0861_SW039_230426, 0861_SW015_230426, 0861_SW025_230426, 0861_QC105_230426, 0861_QC305_230426, 0861_QC406_230427, 0861_MW023_230426, 0861_MW031_230426, 0861_SW052_230426	**26-Apr-2023**	**03-May-2023**	23-Oct-2023	✓	**09-May-2023**	23-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_MW042_230427, 0861_MW043_230427, 0861_MW032_230427, 0861_SW048_230427, 0861_QC405_230426, 0861_QC306_230427, 0861_SW008_230427	**27-Apr-2023**	**03-May-2023**	24-Oct-2023	✓	**09-May-2023**	24-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_MW024_230428, 0861_MW021_230428, 0861_QC106_230428, 0861_SW020_230428, 0861_SW009_230428, 0861_SW004_230428, 0861_SW005_230428, 0861_SW034_230428, 0861_SW016_230428, 0861_SW018_230428, 0861_MW022_230428, 0861_QC307_230428, 0861_QC407_230428	**28-Apr-2023**	**03-May-2023**	25-Oct-2023	✓	**08-May-2023**	25-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC503_230426 - 060422	**28-Apr-2023**	**03-May-2023**	25-Oct-2023	✓	**09-May-2023**	25-Oct-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) 0861_SW049_230426	**26-Apr-2023**	**03-May-2023**	23-Oct-2023	✓	**08-May-2023**	23-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW021_230426, 0861_MW006_230426, 0861_SW039_230426, 0861_SW015_230426, 0861_SW025_230426, 0861_QC105_230426, 0861_QC305_230426, 0861_QC406_230427, 0861_MW023_230426, 0861_MW031_230426, 0861_SW052_230426	**26-Apr-2023**	**03-May-2023**	23-Oct-2023	✓	**09-May-2023**	23-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_MW042_230427, 0861_MW043_230427, 0861_MW032_230427, 0861_SW048_230427, 0861_QC405_230426, 0861_QC306_230427, 0861_SW008_230427	**27-Apr-2023**	**03-May-2023**	24-Oct-2023	✓	**09-May-2023**	24-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_MW024_230428, 0861_MW021_230428, 0861_QC106_230428, 0861_SW020_230428, 0861_SW009_230428, 0861_SW004_230428, 0861_SW005_230428, 0861_SW034_230428, 0861_SW016_230428, 0861_SW018_230428, 0861_MW022_230428, 0861_QC307_230428, 0861_QC407_230428	**28-Apr-2023**	**03-May-2023**	25-Oct-2023	✓	**08-May-2023**	25-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC503_230426 - 060422	**28-Apr-2023**	**03-May-2023**	25-Oct-2023	✓	**09-May-2023**	25-Oct-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_SW049_230426	**26-Apr-2023**	**03-May-2023**	23-Oct-2023	✓	**08-May-2023**	23-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW021_230426, 0861_MW006_230426, 0861_SW039_230426, 0861_SW015_230426, 0861_SW025_230426, 0861_QC105_230426, 0861_QC305_230426, 0861_QC406_230427, 0861_MW023_230426, 0861_MW031_230426, 0861_SW052_230426	**26-Apr-2023**	**03-May-2023**	23-Oct-2023	✓	**09-May-2023**	23-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_MW042_230427, 0861_MW043_230427, 0861_MW032_230427, 0861_SW048_230427, 0861_QC405_230426, 0861_QC306_230427, 0861_SW008_230427	**27-Apr-2023**	**03-May-2023**	24-Oct-2023	✓	**09-May-2023**	24-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_MW024_230428, 0861_MW021_230428, 0861_QC106_230428, 0861_SW020_230428, 0861_SW009_230428, 0861_SW004_230428, 0861_SW005_230428, 0861_SW034_230428, 0861_SW016_230428, 0861_SW018_230428, 0861_MW022_230428, 0861_QC307_230428, 0861_QC407_230428	**28-Apr-2023**	**03-May-2023**	25-Oct-2023	✓	**08-May-2023**	25-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC503_230426 - 060422	**28-Apr-2023**	**03-May-2023**	25-Oct-2023	✓	**09-May-2023**	25-Oct-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0861_SW049_230426	**26-Apr-2023**	**03-May-2023**	23-Oct-2023	✓	**08-May-2023**	23-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_SW021_230426, 0861_MW006_230426, 0861_SW039_230426, 0861_SW015_230426, 0861_SW025_230426, 0861_QC105_230426, 0861_QC305_230426, 0861_QC406_230427, 0861_MW023_230426, 0861_MW031_230426, 0861_SW052_230426	**26-Apr-2023**	**03-May-2023**	23-Oct-2023	✓	**09-May-2023**	23-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_MW042_230427, 0861_MW043_230427, 0861_MW032_230427, 0861_SW048_230427, 0861_QC405_230426, 0861_QC306_230427, 0861_SW008_230427	**27-Apr-2023**	**03-May-2023**	24-Oct-2023	✓	**09-May-2023**	24-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_MW024_230428, 0861_MW021_230428, 0861_QC106_230428, 0861_SW020_230428, 0861_SW009_230428, 0861_SW004_230428, 0861_SW005_230428, 0861_SW034_230428, 0861_SW016_230428, 0861_SW018_230428, 0861_MW022_230428, 0861_QC307_230428, 0861_QC407_230428	**28-Apr-2023**	**03-May-2023**	25-Oct-2023	✓	**08-May-2023**	25-Oct-2023	✓
HDPE (no PTFE) (EP231X) 0861_QC503_230426 - 060422	**28-Apr-2023**	**03-May-2023**	25-Oct-2023	✓	**09-May-2023**	25-Oct-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	38	**5.26**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	38	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	38	**2.63**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	SOIL	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2312770**		
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0861_PFASOMP_23	Page	: 1 of 3
Order number	: 60612563 3.1	Quote number	: ES2022AECOMAU0018 (SY/139/19 v4 60612563_2.1)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: EDQ		
Sampler	: [redacted]		

Dates

Date Samples Received	: 28-Apr-2023 17:20	Issue Date	: 19-May-2023
Client Requested Due Date	: 08-May-2023	Scheduled Reporting Date	: **08-May-2023**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 13.6°C - Ice present
Receipt Detail	: Medium esky	No. of samples received / analysed	: 2 / 2

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- ***SRN Reissued 19/05/2023: As per email from [redacted] on 19/05/2023, Project ID changed to QLD_0861_PFASOMP_23.***
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2312770-001	26-Apr-2023 00:00	0861_MW054S_230426	✓
EB2312770-002	26-Apr-2023 00:00	0861_MW054D_230426	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email
- Chain of Custody (CoC) (COC)	Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email
- EDI Format - ESDAT (ESDAT)	Email

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email
- A4 - AU Tax Invoice (INV)	Email
- Chain of Custody (CoC) (COC)	Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email
- EDI Format - ESDAT (ESDAT)	Email

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email
- Chain of Custody (CoC) (COC)	Email
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email
- EDI Format - ESDAT (ESDAT)	Email

CERTIFICATE OF ANALYSIS

Work Order	: **EB2312770**	Page	: 1 of 5
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 28-Apr-2023 17:20
Order number	: 60612563 3.1	Date Analysis Commenced	: 02-May-2023
C-O-C number	: ----	Issue Date	: 19-May-2023 17:05
Sampler	: [redacted]		
Site	: EDQ		
Quote number	: SY/139/19 v4 60612563_2.1		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	Senior Organic Chemist	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- Amendment 19/05/2023: This report has been amended to alter the project reference code. All analysis results are as per the previous report.
- EP231X PFAS: The LORs of PFBS for sample '0861_MW054S_230426'(EB2312770-001) and PFOS for sample '0861_MW054D_230426' (EB2312770-002) have been raised due to matrix interferences.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW054S_230426	0861_MW054D_230426	----	----	----
				Sampling date / time	26-Apr-2023 00:00	26-Apr-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2312770-001	EB2312770-002	--------	--------	--------
					Result	Result	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.04	<0.02	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		**0.02**	<0.02	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.16**	<0.01	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.19**	<0.02	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		**0.01**	<0.01	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW054S_230426	0861_MW054D_230426	----	----	----
				Sampling date / time	26-Apr-2023 00:00	26-Apr-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2312770-001	EB2312770-002	--------	--------	--------
					Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.38**	<0.01	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.35**	<0.01	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.36**	<0.01	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**109**	**97.5**	----	----	----
13C8-PFOA	----	0.02	%		**96.4**	**89.8**	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EB2312770**	Page	: 1 of 4
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Contact	[redacted]
Address	[redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: +[redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 28-Apr-2023
Order number	: 60612563 3.1	Date Analysis Commenced	: 02-May-2023
C-O-C number	: ----	Issue Date	: 19-May-2023
Sampler	[redacted]		
Site	: EDQ		
Quote number	: SY/139/19 v4 60612563_2.1		
No. of samples received	: 2		
No. of samples analysed	: 2		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	[redacted]	Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5023723)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	97.8	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	105	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	95.9	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	100	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	92.9	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	97.5	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5023723)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	94.8	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	88.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	92.8	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	98.8	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	98.0	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	99.4	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	96.4	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	93.0	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	96.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	101	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	98.0	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5023723)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	93.0	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	99.0	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	104	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	98.1	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	102	62.6	138
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	109	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	104	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5023723)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5023723) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	98.8	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	93.8	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	120	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	98.3	64.2	133
EP231P: PFAS Sums (QCLot: 5023723)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) or Matrix Spike Duplicate (MSD) Results are required to be reported.**

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2312770**	Page	: 1 of 4
Amendment	: **1**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	[redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 28-Apr-2023
Site	: EDQ	Issue Date	: 19-May-2023
Sampler	: [redacted]	No. of samples received	: 2
Order number	: 60612563 3.1	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC 0	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	14	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	14	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)	*Sample Date*	*Extraction / Preparation*			*Analysis*		
		Date extracted	Due for extraction	Evaluation	*Date analysed*	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_MW054S_230426, 0861_MW054D_230426	**26-Apr-2023**	**03-May-2023**	23-Oct-2023	✓	**04-May-2023**	23-Oct-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0861_MW054S_230426, 0861_MW054D_230426	**26-Apr-2023**	**03-May-2023**	23-Oct-2023	✓	**04-May-2023**	23-Oct-2023	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0861_MW054S_230426, 0861_MW054D_230426	**26-Apr-2023**	**03-May-2023**	23-Oct-2023	✓	**04-May-2023**	23-Oct-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_MW054S_230426, 0861_MW054D_230426	**26-Apr-2023**	**03-May-2023**	23-Oct-2023	✓	**04-May-2023**	23-Oct-2023	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
0861_MW054S_230426, 0861_MW054D_230426	**26-Apr-2023**	**03-May-2023**	23-Oct-2023	✓	**04-May-2023**	23-Oct-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	14	**0.00**	**10.00**	✗	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	14	**0.00**	**5.00**	✗	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **EB2314270**

Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: + [redacted]
Facsimile	: [redacted]	Facsimile	: + [redacted]
Project	: 60612563 3.1 QLD_0861_PFASOMP	Page	: 1 of 3
Order number	: 60612563 3.1	Quote number	: ES2022AECOMAU0018 (SY/139/19 v4 60612563_2.1)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: AECOM		

Dates

Date Samples Received	: 12-May-2023 11:13	Issue Date	: 12-May-2023
Client Requested Due Date	: 22-May-2023	Scheduled Reporting Date	: **22-May-2023**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 4.0°C - Ice present
Receipt Detail	: MEDIUM ESKY	No. of samples received / analysed	: 12 / 12

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2314270-002	09-May-2023 00:00	0861_SD028_230509	✓	✓
EB2314270-008	11-May-2023 00:00	0861_SD050_230511	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2314270-001	09-May-2023 00:00	0861_SW028_230509	✓
EB2314270-003	11-May-2023 00:00	0861_MW044_230511	✓
EB2314270-004	09-May-2023 00:00	0861_MW035_230509	✓
EB2314270-005	11-May-2023 00:00	0861_MW055S_230511	✓
EB2314270-006	11-May-2023 00:00	0861_MW055D_230511	✓
EB2314270-007	11-May-2023 00:00	0861_SW050_230511	✓
EB2314270-009	11-May-2023 00:00	0861_QC309_230511	✓
EB2314270-010	11-May-2023 00:00	0861_QC409_230511	✓
EB2314270-011	09-May-2023 00:00	0861_QC308_230509	✓
EB2314270-012	09-May-2023 00:00	0861_QC408_230509	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP reports

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

CERTIFICATE OF ANALYSIS

Work Order	: **EB2314270**	Page	: 1 of 9
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 12-May-2023 11:13
Order number	: 60612563 3.1	Date Analysis Commenced	: 12-May-2023
C-O-C number	: ----	Issue Date	: 19-May-2023 17:49
Sampler	: AECOM		
Site	: ----		
Quote number	: SY/139/19 v4 60612563_2.1		
No. of samples received	: 12		
No. of samples analysed	: 12		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	[redacted]	Brisbane Inorganics, Stafford, QLD Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X PFAS: Sample '0861_SD050_230511' (EB2314270-008) required dilution prior to analysis due to matrix interference (internal standard suppression). LOR values have been adjusted accordingly.
- EP231X PFAS: High LCS recovery for 10:2 FTS deemed acceptable as associated sample analyte results are less than the LOR.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	0861_SD028_230509	0861_SD050_230511	----	----	----
				Sampling date / time	09-May-2023 00:00	11-May-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit		EB2314270-002	EB2314270-008	--------	--------	--------
					Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**41.3**	**56.9**	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		**0.0006**	**0.0021**	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0124**	**0.0176**	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	**0.0002**	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0005	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0005	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0005	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0005	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	**0.0016**	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0012	----	----	----

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	0861_SD028_230509	0861_SD050_230511	----	----	----
			Sampling date / time	09-May-2023 00:00	11-May-2023 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EB2314270-002	EB2314270-008	--------	--------	--------
				Result	Result	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	----	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	**0.0130**	**0.0215**	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	**0.0130**	**0.0197**	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	**0.0130**	**0.0199**	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**112**	**93.5**	----	----	----
13C8-PFOA	----	0.0002	%	**108**	**96.0**	----	----	----

Analytical Results

Sub-Matrix: WATER
(Matrix: WATER)

Compound	CAS Number	LOR	Unit	Sample ID	0861_SW028_230509	0861_MW044_230511	0861_MW035_230509	0861_MW055S_230511	0861_MW055D_230511
				Sampling date / time	09-May-2023 00:00	11-May-2023 00:00	09-May-2023 00:00	11-May-2023 00:00	11-May-2023 00:00
					EB2314270-001	EB2314270-003	EB2314270-004	EB2314270-005	EB2314270-006
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		**0.03**	<0.02	<0.02	**0.06**	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.05**	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.13**	**0.02**	<0.01	**0.30**	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.30**	**0.02**	<0.01	**0.18**	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	**0.05**	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	**0.02**	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW028_230509	0861_MW044_230511	0861_MW035_230509	0861_MW055S_230511	0861_MW055D_230511
				Sampling date / time	09-May-2023 00:00	11-May-2023 00:00	09-May-2023 00:00	11-May-2023 00:00	11-May-2023 00:00
Compound	CAS Number	LOR	Unit		EB2314270-001	EB2314270-003	EB2314270-004	EB2314270-005	EB2314270-006
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.46**	**0.04**	<0.01	**0.66**	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.43**	**0.04**	<0.01	**0.48**	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.46**	**0.04**	<0.01	**0.61**	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**88.6**	**96.1**	**93.9**	**94.3**	**87.5**
13C8-PFOA	----	0.02	%		**95.7**	**97.3**	**98.0**	**96.5**	**98.8**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW050_230511	0861_QC309_230511	0861_QC409_230511	0861_QC308_230509	0861_QC408_230509
				Sampling date / time	11-May-2023 00:00	11-May-2023 00:00	11-May-2023 00:00	09-May-2023 00:00	09-May-2023 00:00
Compound	CAS Number	LOR	Unit		EB2314270-007	EB2314270-009	EB2314270-010	EB2314270-011	EB2314270-012
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		**0.11**	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		**0.11**	<0.01	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		**0.04**	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW050_230511	0861_QC309_230511	0861_QC409_230511	0861_QC308_230509	0861_QC408_230509
				Sampling date / time	11-May-2023 00:00	11-May-2023 00:00	11-May-2023 00:00	09-May-2023 00:00	09-May-2023 00:00
Compound	CAS Number	LOR	Unit		EB2314270-007	EB2314270-009	EB2314270-010	EB2314270-011	EB2314270-012
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		**0.26**	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		**0.22**	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		**0.26**	<0.01	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**97.9**	**90.9**	**85.1**	**92.7**	**85.7**
13C8-PFOA	----	0.02	%		**92.9**	**97.5**	**100**	**93.4**	**98.0**

Surrogate Control Limits

Sub-Matrix: **SEDIMENT**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EB2314270**	Page	: 1 of 11
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	[redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 12-May-2023
Order number	: 60612563 3.1	Date Analysis Commenced	: 12-May-2023
C-O-C number	: ----	Issue Date	: 19-May-2023
Sampler	: AECOM		
Site	: ----		
Quote number	: SY/139/19 v4 60612563_2.1		
No. of samples received	: 12		
No. of samples analysed	: 12		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	[redacted]	Brisbane Inorganics, Stafford, QLD Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5048177)									
EB2313863-001	Anonymous	EA055: Moisture Content	----	0.1	%	32.8	33.6	2.2	0% - 20%
EB2314277-024	Anonymous	EA055: Moisture Content	----	0.1	%	11.1	10.8	1.9	0% - 50%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5048175)									
EB2313863-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EB2314277-024	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0006	0.0006	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5048175)									
EB2313863-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5048175) - continued									
EB2313863-001	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2314277-024	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0002	0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0004	0.0003	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0003	0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0010	0.0008	14.9	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	0.0002	0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	0.0005	0.0006	21.4	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5048175)									
EB2313863-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2314277-024	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5048175)									
EB2313863-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2314277-024	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5047744)									
EB2313484-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.02	0.02	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.24	0.21	13.1	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EB2314270-005	0861_MW055S_230511	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.30	0.30	0.0	0% - 20%
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.18	0.19	0.0	0% - 50%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.06	0.05	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.05	0.05	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5047744)									
EB2313484-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.04	0.03	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.04	0.04	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	0.03	0.03	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5047744) - continued									
EB2313484-001	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EB2314270-005	0861_MW055S_230511	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.02	0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5047744)									
EB2313484-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2314270-005	0861_MW055S_230511	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5047744)									
EB2313484-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.29	0.19	40.8	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	0.06	0.08	24.2	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EB2314270-005	0861_MW055S_230511	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 5047744)									
EB2313484-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.76	0.64	17.1	0% - 50%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.26	0.23	12.2	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.73	0.61	17.9	0% - 50%
EB2314270-005	0861_MW055S_230511	EP231X: Sum of PFAS	----	0.01	µg/L	0.66	0.65	1.5	0% - 20%
		EP231X: Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.48	0.49	2.1	0% - 20%
		EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	0.61	0.60	1.7	0% - 20%

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5048175)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	110	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	106	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	106	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	113	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	109	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	116	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5048175)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	98.0	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	110	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	111	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	111	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	108	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	108	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	114	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	112	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5048175)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	112	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	101	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	105	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	117	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	114	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	111	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5048175)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5048175) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	92.3	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	114	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	114	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	111	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5047744)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	108	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	127	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	121	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	130	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	98.9	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	126	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5047744)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	110	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	112	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	105	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	110	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	121	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	125	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	108	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	133	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	132	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5047744)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	116	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	90.5	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	111	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	122	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	138	62.6	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5047744) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	135	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	129	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5047744)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	139	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	113	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	136	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	# 138	64.2	133
EP231P: PFAS Sums (QCLot: 5047744)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5048175)							
EB2313863-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	114	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	117	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	113	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	116	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	110	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	112	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5048175)							
EB2313863-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	107	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	111	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	120	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	117	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	112	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	117	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	110	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	107	64.0	136

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5048175) - continued							
EB2313863-002	Anonymous	EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	121	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	120	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	119	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5048175)							
EB2313863-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	109	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	129	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	112	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	117	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	129	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	129	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	128	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5048175)							
EB2313863-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	115	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	124	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	120	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	103	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Matrix Spike (MS) Report: Acceptable Limits (%) Low	Matrix Spike (MS) Report: Acceptable Limits (%) High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5047744)							
EB2313484-003	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.2218 µg/L	128	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.235 µg/L	123	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.2352 µg/L	112	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.238 µg/L	112	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.232 µg/L	82.1	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.241 µg/L	99.4	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5047744)							
EB2313484-003	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	85.0	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	98.7	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	107	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	106	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	106	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	112	69.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5047744) - continued							
EB2313484-003	Anonymous	EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	114	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	118	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	96.0	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	112	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	106	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5047744)							
EB2313484-003	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	105	59.0	135
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	97.2	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	95.5	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	108	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	111	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	109	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	110	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5047744)							
EB2313484-003	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.234 µg/L	113	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.2378 µg/L	106	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.24 µg/L	98.9	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.2415 µg/L	70.4	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2314270**	Page	: 1 of 6
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP_23	Date Samples Received	: 12-May-2023
Site	: ----	Issue Date	: 19-May-2023
Sampler	: AECOM	No. of samples received	: 12
Order number	: 60612563 3.1	No. of samples analysed	: 12

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP231D: (n:2) Fluorotelomer Sulfonic Acids	QC-5047744-002	----	**10:2 Fluorotelomer sulfonic acid (10:2 FTS)**	120226-60-0	138 %	64.2-133%	**Recovery greater than upper control limit**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) 0861_SD050_230511	**11-May-2023**	**----**	----	**----**	**15-May-2023**	25-May-2023	✓
Soil Glass Jar - Unpreserved (EA055) 0861_SD028_230509	**09-May-2023**	**----**	----	**----**	**15-May-2023**	23-May-2023	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) 0861_SD050_230511	**11-May-2023**	**15-May-2023**	07-Nov-2023	✓	**19-May-2023**	24-Jun-2023	✓
Soil Glass Jar - Unpreserved (EP231X) 0861_SD028_230509	**09-May-2023**	**15-May-2023**	05-Nov-2023	✓	**19-May-2023**	24-Jun-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) 0861_SD050_230511	**11-May-2023**	**15-May-2023**	07-Nov-2023	✓	**19-May-2023**	24-Jun-2023	✓
Soil Glass Jar - Unpreserved (EP231X) 0861_SD028_230509	**09-May-2023**	**15-May-2023**	05-Nov-2023	✓	**19-May-2023**	24-Jun-2023	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) 0861_SD050_230511	**11-May-2023**	**15-May-2023**	07-Nov-2023	✓	**19-May-2023**	24-Jun-2023	✓
Soil Glass Jar - Unpreserved (EP231X) 0861_SD028_230509	**09-May-2023**	**15-May-2023**	05-Nov-2023	✓	**19-May-2023**	24-Jun-2023	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0861_SD050_230511	**11-May-2023**	**15-May-2023**	07-Nov-2023	✓	**19-May-2023**	24-Jun-2023	✓
Soil Glass Jar - Unpreserved (EP231X)							
0861_SD028_230509	**09-May-2023**	**15-May-2023**	05-Nov-2023	✓	**19-May-2023**	24-Jun-2023	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X)							
0861_SD050_230511	**11-May-2023**	**15-May-2023**	07-Nov-2023	✓	**19-May-2023**	24-Jun-2023	✓
Soil Glass Jar - Unpreserved (EP231X)							
0861_SD028_230509	**09-May-2023**	**15-May-2023**	05-Nov-2023	✓	**19-May-2023**	24-Jun-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_SW028_230509, 0861_MW035_230509, 0861_QC308_230509, 0861_QC408_230509	**09-May-2023**	**15-May-2023**	05-Nov-2023	✓	**17-May-2023**	05-Nov-2023	✓
HDPE (no PTFE) (EP231X)							
0861_MW044_230511, 0861_MW055S_230511, 0861_MW055D_230511, 0861_SW050_230511, 0861_QC309_230511, 0861_QC409_230511	**11-May-2023**	**15-May-2023**	07-Nov-2023	✓	**17-May-2023**	07-Nov-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
0861_SW028_230509, 0861_MW035_230509, 0861_QC308_230509, 0861_QC408_230509	**09-May-2023**	**15-May-2023**	05-Nov-2023	✓	**17-May-2023**	05-Nov-2023	✓
HDPE (no PTFE) (EP231X)							
0861_MW044_230511, 0861_MW055S_230511, 0861_MW055D_230511, 0861_SW050_230511, 0861_QC309_230511, 0861_QC409_230511	**11-May-2023**	**15-May-2023**	07-Nov-2023	✓	**17-May-2023**	07-Nov-2023	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
0861_SW028_230509, 0861_MW035_230509, 0861_QC308_230509, 0861_QC408_230509	**09-May-2023**	**15-May-2023**	05-Nov-2023	✓	**17-May-2023**	05-Nov-2023	✓
HDPE (no PTFE) (EP231X)							
0861_MW044_230511, 0861_MW055S_230511, 0861_MW055D_230511, 0861_SW050_230511, 0861_QC309_230511, 0861_QC409_230511	**11-May-2023**	**15-May-2023**	07-Nov-2023	✓	**17-May-2023**	07-Nov-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) 0861_SW028_230509, 0861_MW035_230509, 0861_QC308_230509, 0861_QC408_230509	**09-May-2023**	**15-May-2023**	05-Nov-2023	✓	**17-May-2023**	05-Nov-2023	✓
HDPE (no PTFE) (EP231X) 0861_MW044_230511, 0861_MW055S_230511, 0861_MW055D_230511, 0861_SW050_230511, 0861_QC309_230511, 0861_QC409_230511	**11-May-2023**	**15-May-2023**	07-Nov-2023	✓	**17-May-2023**	07-Nov-2023	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) 0861_SW028_230509, 0861_MW035_230509, 0861_QC308_230509, 0861_QC408_230509	**09-May-2023**	**15-May-2023**	05-Nov-2023	✓	**17-May-2023**	05-Nov-2023	✓
HDPE (no PTFE) (EP231X) 0861_MW044_230511, 0861_MW055S_230511, 0861_MW055D_230511, 0861_SW050_230511, 0861_QC309_230511, 0861_QC409_230511	**11-May-2023**	**15-May-2023**	07-Nov-2023	✓	**17-May-2023**	07-Nov-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order	: **EB2315514**		
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
E-mail	: [redacted]	E-mail	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Facsimile	: [redacted]	Facsimile	: [redacted]
Project	: QLD_0861_PFASOMP_23 60612563 3.1	Page	: 1 of 3
Order number	: 60612563 3.1	Quote number	: ES2020AECOMAU0024 (SY/139/19 V3_QLD)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 23-May-2023 14:34	Issue Date	: 24-May-2023
Client Requested Due Date	: 30-May-2023	Scheduled Reporting Date	: **30-May-2023**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 5.0°C - Ice present
Receipt Detail	: Medium esky	No. of samples received / analysed	: 24 / 24

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please be advised that for sample point 0861_QC111_230522, the containers submitted came labelled as 0861_QC113_230522. ALS as labelled these containers as per the received chain of custody.**
- Discounted Package Prices apply only when specific ALS Group Codes ('W', 'S', 'NT' suites) are referenced on COCs.
- Please direct any turn around / technical queries to the laboratory contact designated above.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Analysis will be conducted by ALS Environmental, Brisbane, NATA accreditation no. 825, Site No. 818 (Micro site no. 18958).
- **Breaches in recommended extraction / analysis holding times (if any) are displayed overleaf in the Proactive Holding Time Report table.**
- **Samples "QC211 and QC212 " has been forwarded to NMI , as requested. Please note that this will incur a freight forwarding fee.**
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)
EB2315514-006	22-May-2023 00:00	0861_SD036_230522	✓	✓
EB2315514-008	22-May-2023 00:00	0861_SD047_230522	✓	✓
EB2315514-012	22-May-2023 00:00	0861_SD088_230522	✓	✓
EB2315514-014	22-May-2023 00:00	0861_SD089_230522	✓	✓
EB2315514-016	22-May-2023 00:00	0861_SD090_230522	✓	✓
EB2315514-018	22-May-2023 00:00	0861_SD091_230522	✓	✓
EB2315514-020	22-May-2023 00:00	0861_SD094_230522	✓	✓
EB2315514-021	22-May-2023 00:00	0861_QC111_230522	✓	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP231X PFAS - Full Suite (28 analytes)
EB2315514-001	22-May-2023 00:00	0861_MW002_230522	✓
EB2315514-002	22-May-2023 00:00	0861_MW030_230522	✓
EB2315514-003	22-May-2023 00:00	0861_MW033_230522	✓
EB2315514-004	22-May-2023 00:00	0861_MW034_230522	✓
EB2315514-005	22-May-2023 00:00	0861_SW036_230522	✓
EB2315514-007	22-May-2023 00:00	0861_SW047_230522	✓
EB2315514-009	22-May-2023 00:00	0861_QC310_230522	✓
EB2315514-010	22-May-2023 00:00	0861_QC410_230522	✓
EB2315514-011	22-May-2023 00:00	0861_SW088_230522	✓
EB2315514-013	22-May-2023 00:00	0861_SW089_230522	✓
EB2315514-015	22-May-2023 00:00	0861_SW090_230522	✓
EB2315514-017	22-May-2023 00:00	0861_SW091_230522	✓
EB2315514-019	22-May-2023 00:00	0861_SW094_230522	✓
EB2315514-022	22-May-2023 00:00	0861_QC112_230522	✓
EB2315514-023	23-May-2023 00:00	0861_QC311_230523	✓

			WATER - EP231X PFAS - Full Suite (28 analytes)
EB2315514-024	23-May-2023 00:00	0861_QC411_230523	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	[redacted]
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

DERP ESDAT REPORTS

- EDI Format - ESDAT (ESDAT)	Email	

[redacted]

- *AU Certificate of Analysis - NATA (COA)	Email	
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	
- Chain of Custody (CoC) (COC)	Email	
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	
- EDI Format - ESDAT (ESDAT)	Email	

CERTIFICATE OF ANALYSIS

Work Order	: **EB2315514**	Page	: 1 of 15
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	: [redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP_23 60612563 3.1	Date Samples Received	: 23-May-2023 14:34
Order number	: 60612563 3.1	Date Analysis Commenced	: 24-May-2023
C-O-C number	: ----	Issue Date	: 31-May-2023 18:23
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 24		
No. of samples analysed	: 24		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	[redacted]	Brisbane Organics, Stafford, QLD Brisbane Inorganics, Stafford, QLD Brisbane Organics, Stafford, QLD Brisbane Inorganics, Stafford, QLD Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP231X PFAS: The LOR values of particular analytes have been raised due to the presence of sample matrix interference.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD036_230522	0861_SD047_230522	0861_SD088_230522	0861_SD089_230522	0861_SD090_230522
				Sampling date / time	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00
Compound	CAS Number	LOR	Unit		EB2315514-006	EB2315514-008	EB2315514-012	EB2315514-014	EB2315514-016
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**43.3**	**57.3**	**38.3**	**44.3**	**52.8**
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0004	<0.0004	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0014	<0.0010	<0.0004	<0.0016	<0.0040
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0012	<0.0420	<0.0006	<0.0042	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD036_230522	0861_SD047_230522	0861_SD088_230522	0861_SD089_230522	0861_SD090_230522
				Sampling date / time	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00
Compound	CAS Number	LOR	Unit		EB2315514-006	EB2315514-008	EB2315514-012	EB2315514-014	EB2315514-016
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**102**	**104**	**128**	**111**	**122**
13C8-PFOA	----	0.0002	%		**104**	**95.5**	**108**	**104**	**98.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	0861_SD091_230522	0861_SD094_230522	0861_QC111_230522	----	----
				Sampling date / time	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	----	----
Compound	CAS Number	LOR	Unit		EB2315514-018	EB2315514-020	EB2315514-021	--------	--------
					Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		**34.8**	**43.0**	**45.1**	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	**0.0002**	<0.0002	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0018	<0.0048	<0.0014	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0016	<0.0006	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg		<0.0005	<0.0005	<0.0005	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	0861_SD091_230522	0861_SD094_230522	0861_QC111_230522	----	----
			Sampling date / time	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	----	----
Compound	CAS Number	LOR	Unit	EB2315514-018	EB2315514-020	EB2315514-021	--------	--------
				Result	Result	Result	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	<0.0002	**0.0002**	<0.0002	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	**0.0002**	<0.0002	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	**0.0002**	<0.0002	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**120**	**128**	**126**	----	----
13C8-PFOA	----	0.0002	%	**104**	**110**	**109**	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW002_230522	0861_MW030_230522	0861_MW033_230522	0861_MW034_230522	0861_SW036_230522
				Sampling date / time	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00
Compound	CAS Number	LOR	Unit		EB2315514-001	EB2315514-002	EB2315514-003	EB2315514-004	EB2315514-005
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	**4.66**	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	**4.62**	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	**12.7**	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	**0.21**	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	**0.24**	**0.02**	**0.07**	**0.01**
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	**1.2**	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	**1.88**	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	**9.86**	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	**1.76**	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	**1.37**	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_MW002_230522	0861_MW030_230522	0861_MW033_230522	0861_MW034_230522	0861_SW036_230522
				Sampling date / time	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00
Compound	CAS Number	LOR	Unit		EB2315514-001	EB2315514-002	EB2315514-003	EB2315514-004	EB2315514-005
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	**38.5**	**0.02**	**0.07**	**0.01**
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	**12.9**	**0.02**	**0.07**	**0.01**
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	**33.7**	**0.02**	**0.07**	**0.01**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**100**	**101**	**95.7**	**100**	**101**
13C8-PFOA	----	0.02	%		**99.5**	**101**	**100**	**101**	**99.5**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW047_230522	0861_QC310_230522	0861_QC410_230522	0861_SW088_230522	0861_SW089_230522
				Sampling date / time	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00
Compound	CAS Number	LOR	Unit		EB2315514-007	EB2315514-009	EB2315514-010	EB2315514-011	EB2315514-013
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW047_230522	0861_QC310_230522	0861_QC410_230522	0861_SW088_230522	0861_SW089_230522
				Sampling date / time	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00
Compound	CAS Number	LOR	Unit		EB2315514-007	EB2315514-009	EB2315514-010	EB2315514-011	EB2315514-013
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**100**	**104**	**104**	**96.1**	**99.9**
13C8-PFOA	----	0.02	%		**99.8**	**99.2**	**104**	**102**	**99.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW090_230522	0861_SW091_230522	0861_SW094_230522	0861_QC112_230522	0861_QC311_230523
				Sampling date / time	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	23-May-2023 00:00
Compound	CAS Number	LOR	Unit		EB2315514-015	EB2315514-017	EB2315514-019	EB2315514-022	EB2315514-023
					Result	Result	Result	Result	Result
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	<0.01	**0.08**	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	<0.01	**0.13**	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	<0.02	**0.02**	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	<0.02	**0.03**	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_SW090_230522	0861_SW091_230522	0861_SW094_230522	0861_QC112_230522	0861_QC311_230523
				Sampling date / time	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	22-May-2023 00:00	23-May-2023 00:00
Compound	CAS Number	LOR	Unit		EB2315514-015	EB2315514-017	EB2315514-019	EB2315514-022	EB2315514-023
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	**0.26**	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	**0.21**	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	**0.26**	<0.01	<0.01
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**96.6**	**101**	**103**	**100**	**103**
13C8-PFOA	----	0.02	%		**99.5**	**97.3**	**99.4**	**101**	**101**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC411_230523	----	----	----	----
				Sampling date / time	23-May-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2315514-024	--------	--------	--------	--------
					Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	0861_QC411_230523	----	----	----	----
				Sampling date / time	23-May-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EB2315514-024	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**100**	----	----	----	----
13C8-PFOA	----	0.02	%		**97.9**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	76	136
13C8-PFOA	----	78	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP231S: PFAS Surrogate			
13C4-PFOS	----	65	140
13C8-PFOA	----	71	133

QUALITY CONTROL REPORT

Work Order	: **EB2315514**	Page	: 1 of 8
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	: [redacted]	Contact	[redacted]
Address	: [redacted]	Address	: [redacted]
Telephone	: [redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP_23 60612563 3.1	Date Samples Received	: 23-May-2023
Order number	: 60612563 3.1	Date Analysis Commenced	: 24-May-2023
C-O-C number	: ----	Issue Date	: 31-May-2023
Sampler	: ----		
Site	: ----		
Quote number	: SY/139/19 V3_QLD		
No. of samples received	: 24		
No. of samples analysed	: 24		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
[redacted]	[redacted]	Brisbane Organics, Stafford, QLD
		Brisbane Inorganics, Stafford, QLD
		Brisbane Organics, Stafford, QLD
		Brisbane Inorganics, Stafford, QLD
		Brisbane Organics, Stafford, QLD

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5073237)									
EB2315514-006	0861_SD036_230522	EA055: Moisture Content	----	0.1	%	43.3	42.1	2.8	0% - 20%
EB2315546-003	Anonymous	EA055: Moisture Content	----	0.1	%	13.6	13.6	0.0	0% - 20%
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 5073236)									
EB2315514-006	0861_SD036_230522	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0004	<0.0002	66.7	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0014	<0.0014	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0012	<0.0012	0.0	No Limit
EB2315546-003	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	0.0016	0.0016	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0008	0.0008	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5073236)									
EB2315514-006	0861_SD036_230522	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 5073236) - continued									
EB2315514-006	0861_SD036_230522	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EB2315546-003	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 5073236)									
EB2315514-006	0861_SD036_230522	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2315546-003	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 5073236)									
EB2315514-006	0861_SD036_230522	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EB2315546-003	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5073236)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.0011 mg/kg	106	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00117 mg/kg	118	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00118 mg/kg	108	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00119 mg/kg	124	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00116 mg/kg	99.1	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.0012 mg/kg	101	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5073236)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	97.9	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.8	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	102	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	103	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	107	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	115	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.6	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.2	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	102	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5073236)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	109	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	110	59.6	143
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	93.9	62.8	140
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	102	61.5	139
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	126	61.9	137
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	101	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	112	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5073236)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5073236) - continued								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00117 mg/kg	97.9	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00118 mg/kg	113	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.0012 mg/kg	111	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.0012 mg/kg	102	54.8	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5072440)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.2218 µg/L	110	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.2352 µg/L	125	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.2373 µg/L	112	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.238 µg/L	107	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.232 µg/L	102	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.241 µg/L	105	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5072440)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	111	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	105	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	103	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	104	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	104	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	107	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	102	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	105	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	95.4	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	97.0	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	95.8	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5072440)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	109	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	117	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	107	60.5	138
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	108	68.3	134
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	105	62.6	138

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5072440) - continued								
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	108	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	99.2	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5072440)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.2343 µg/L	120	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.2378 µg/L	114	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.24 µg/L	121	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.241 µg/L	103	64.2	133
EP231P: PFAS Sums (QCLot: 5072440)								
EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFHxS and PFOS	355-46-4/17 63-23-1	0.01	µg/L	<0.01	----	----	----	----
EP231X: Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 5073236)							
EB2315514-008	0861_SD047_230522	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0011 mg/kg	95.9	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00117 mg/kg	123	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00118 mg/kg	122	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00119 mg/kg	89.9	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00116 mg/kg	111	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0012 mg/kg	# Not Determined	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5073236)							
EB2315514-008	0861_SD047_230522	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	126	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	123	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	109	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	98.4	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	109	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	115	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	84.8	69.0	133

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 5073236) - continued							
EB2315514-008	0861_SD047_230522	EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	121	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	87.6	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	98.8	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	132	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 5073236)							
EB2315514-008	0861_SD047_230522	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	102	48.0	128
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	113	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	74.0	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	87.0	70.0	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	73.1	70.0	130
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	135	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	108	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 5073236)							
EB2315514-008	0861_SD047_230522	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00117 mg/kg	97.9	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00118 mg/kg	87.3	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0012 mg/kg	98.8	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0012 mg/kg	82.5	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB2315514**	Page	: 1 of 7
Client	: **AECOM AUSTRALIA PTY LTD**	Laboratory	: Environmental Division Brisbane
Contact	[redacted]	Telephone	: [redacted]
Project	: QLD_0861_PFASOMP_23 60612563 3.1	Date Samples Received	: 23-May-2023
Site	: ----	Issue Date	: 31-May-2023
Sampler	: ----	No. of samples received	: 24
Order number	: 60612563 3.1	No. of samples analysed	: 24

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231A: Perfluoroalkyl Sulfonic Acids	EB2315514--008	0861_SD047_230522	**Perfluorodecane sulfonic acid (PFDS)**	335-77-3	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
	0				
Laboratory Duplicates (DUP)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	17	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	0	17	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EA055: Moisture Content (Dried @ 105-110°C)								
HDPE Soil Jar (EA055)								
0861_SD036_230522,	0861_SD047_230522,	**22-May-2023**	**----**	----	**----**	**25-May-2023**	05-Jun-2023	✓
0861_SD088_230522,	0861_SD089_230522,							
0861_SD090_230522,	0861_SD091_230522,							
0861_SD094_230522,	0861_QC111_230522							
EP231A: Perfluoroalkyl Sulfonic Acids								
HDPE Soil Jar (EP231X)								
0861_SD036_230522,	0861_SD047_230522,	**22-May-2023**	**25-May-2023**	18-Nov-2023	✓	**31-May-2023**	04-Jul-2023	✓
0861_SD088_230522,	0861_SD089_230522,							
0861_SD090_230522,	0861_SD091_230522,							
0861_SD094_230522,	0861_QC111_230522							

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X)							
0861_SD036_230522, 0861_SD047_230522, 0861_SD088_230522, 0861_SD089_230522, 0861_SD090_230522, 0861_SD091_230522, 0861_SD094_230522, 0861_QC111_230522	**22-May-2023**	**25-May-2023**	18-Nov-2023	✓	**31-May-2023**	04-Jul-2023	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X)							
0861_SD036_230522, 0861_SD047_230522, 0861_SD088_230522, 0861_SD089_230522, 0861_SD090_230522, 0861_SD091_230522, 0861_SD094_230522, 0861_QC111_230522	**22-May-2023**	**25-May-2023**	18-Nov-2023	✓	**31-May-2023**	04-Jul-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X)							
0861_SD036_230522, 0861_SD047_230522, 0861_SD088_230522, 0861_SD089_230522, 0861_SD090_230522, 0861_SD091_230522, 0861_SD094_230522, 0861_QC111_230522	**22-May-2023**	**25-May-2023**	18-Nov-2023	✓	**31-May-2023**	04-Jul-2023	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X)							
0861_SD036_230522, 0861_SD047_230522, 0861_SD088_230522, 0861_SD089_230522, 0861_SD090_230522, 0861_SD091_230522, 0861_SD094_230522, 0861_QC111_230522	**22-May-2023**	**25-May-2023**	18-Nov-2023	✓	**31-May-2023**	04-Jul-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
0861_MW002_230522, 0861_MW030_230522, 0861_MW033_230522, 0861_MW034_230522, 0861_SW036_230522, 0861_SW047_230522, 0861_QC310_230522, 0861_QC410_230522, 0861_SW088_230522, 0861_SW089_230522, 0861_SW090_230522, 0861_SW091_230522, 0861_SW094_230522, 0861_QC112_230522	**22-May-2023**	**26-May-2023**	18-Nov-2023	✓	**31-May-2023**	18-Nov-2023	✓
HDPE (no PTFE) (EP231X)							
0861_QC311_230523, 0861_QC411_230523	**23-May-2023**	**26-May-2023**	19-Nov-2023	✓	**31-May-2023**	19-Nov-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231B: Perfluoroalkyl Carboxylic Acids								
HDPE (no PTFE) (EP231X)								
0861_MW002_230522,	0861_MW030_230522,	**22-May-2023**	**26-May-2023**	18-Nov-2023	✓	**31-May-2023**	18-Nov-2023	✓
0861_MW033_230522,	0861_MW034_230522,							
0861_SW036_230522,	0861_SW047_230522,							
0861_QC310_230522,	0861_QC410_230522,							
0861_SW088_230522,	0861_SW089_230522,							
0861_SW090_230522,	0861_SW091_230522,							
0861_SW094_230522,	0861_QC112_230522							
HDPE (no PTFE) (EP231X)								
0861_QC311_230523,	0861_QC411_230523	**23-May-2023**	**26-May-2023**	19-Nov-2023	✓	**31-May-2023**	19-Nov-2023	✓
EP231C: Perfluoroalkyl Sulfonamides								
HDPE (no PTFE) (EP231X)								
0861_MW002_230522,	0861_MW030_230522,	**22-May-2023**	**26-May-2023**	18-Nov-2023	✓	**31-May-2023**	18-Nov-2023	✓
0861_MW033_230522,	0861_MW034_230522,							
0861_SW036_230522,	0861_SW047_230522,							
0861_QC310_230522,	0861_QC410_230522,							
0861_SW088_230522,	0861_SW089_230522,							
0861_SW090_230522,	0861_SW091_230522,							
0861_SW094_230522,	0861_QC112_230522							
HDPE (no PTFE) (EP231X)								
0861_QC311_230523,	0861_QC411_230523	**23-May-2023**	**26-May-2023**	19-Nov-2023	✓	**31-May-2023**	19-Nov-2023	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
HDPE (no PTFE) (EP231X)								
0861_MW002_230522,	0861_MW030_230522,	**22-May-2023**	**26-May-2023**	18-Nov-2023	✓	**31-May-2023**	18-Nov-2023	✓
0861_MW033_230522,	0861_MW034_230522,							
0861_SW036_230522,	0861_SW047_230522,							
0861_QC310_230522,	0861_QC410_230522,							
0861_SW088_230522,	0861_SW089_230522,							
0861_SW090_230522,	0861_SW091_230522,							
0861_SW094_230522,	0861_QC112_230522							
HDPE (no PTFE) (EP231X)								
0861_QC311_230523,	0861_QC411_230523	**23-May-2023**	**26-May-2023**	19-Nov-2023	✓	**31-May-2023**	19-Nov-2023	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP231P: PFAS Sums								
HDPE (no PTFE) (EP231X)								
0861_MW002_230522,	0861_MW030_230522,	**22-May-2023**	**26-May-2023**	18-Nov-2023	✓	**31-May-2023**	18-Nov-2023	✓
0861_MW033_230522,	0861_MW034_230522,							
0861_SW036_230522,	0861_SW047_230522,							
0861_QC310_230522,	0861_QC410_230522,							
0861_SW088_230522,	0861_SW089_230522,							
0861_SW090_230522,	0861_SW091_230522,							
0861_SW094_230522,	0861_QC112_230522							
HDPE (no PTFE) (EP231X)								
0861_QC311_230523,	0861_QC411_230523	**23-May-2023**	**26-May-2023**	19-Nov-2023	✓	**31-May-2023**	19-Nov-2023	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	17	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	0	17	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/230427
	[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_3_1
		Date Received	: 27-APR-2023
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N23/008174	0861_QC400_230417	SEDIMENT 17/04/2023

Lab Reg No.		N23/008174				
Date Sampled		17-APR-2023				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	mg/kg	<0.002				NR70
PFPeA (2706-90-3)	mg/kg	<0.002				NR70
PFHxA (307-24-4)	mg/kg	0.0017				NR70
PFHpA (375-85-9)	mg/kg	<0.001				NR70
PFOA (335-67-1)	mg/kg	<0.001				NR70
PFNA (375-95-1)	mg/kg	<0.001				NR70
PFDA (335-76-2)	mg/kg	<0.001				NR70
PFUdA (2058-94-8)	mg/kg	<0.002				NR70
PFDoA (307-55-1)	mg/kg	<0.002				NR70
PFTrDA (72629-94-8)	mg/kg	<0.002				NR70
PFTeDA (376-06-7)	mg/kg	<0.002				NR70
PFHxDA (67905-19-5)	mg/kg	<0.002				NR70
PFODA (16517-11-6)	mg/kg	<0.005				NR70
FOUEA (70887-84-2)	mg/kg	<0.001				NR70
PFBS (375-73-5)	mg/kg	<0.001				NR70
PFPeS (2706-91-4)	mg/kg	<0.001				NR70
PFHxS (355-46-4)	mg/kg	0.0040				NR70
PFHpS (375-92-8)	mg/kg	<0.001				NR70
PFOS (1763-23-1)	mg/kg	0.035				NR70
PFNS (68259-12-1)	mg/kg	<0.001				NR70
PFDS (335-77-3)	mg/kg	<0.001				NR70
PFOSA (754-91-6)	mg/kg	<0.001				NR70
N-MeFOSA (31506-32-8)	mg/kg	<0.002				NR70
N-EtFOSA (4151-50-2)	mg/kg	<0.002				NR70
N-MeFOSAA (2355-31-9)	mg/kg	<0.002				NR70
N-EtFOSAA(2991-50-6)	mg/kg	<0.002				NR70
N-MeFOSE (24448-09-7)	mg/kg	<0.005				NR70
N-EtFOSE (1691-99-2)	mg/kg	<0.005				NR70
4:2 FTS (757124-72-4)	mg/kg	<0.001				NR70
6:2 FTS (27619-97-2)	mg/kg	<0.001				NR70

REPORT OF ANALYSIS

Lab Reg No.		N23/008174				
Date Sampled		17-APR-2023				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
8:2 FTS (39108-34-4)	mg/kg	<0.001				NR70
10:2 FTS (120226-60-0)	mg/kg	<0.002				NR70
8:2 diPAP (678-41-1)	mg/kg	<0.002				NR70
PFBA (Surrogate Recovery)	%	124				NR70
PFPeA (Surrogate Recovery)	%	118				NR70
PFHxA (Surrogate Recovery)	%	121				NR70
PFHpA (Surrogate Recovery)	%	133				NR70
PFOA (Surrogate Recovery)	%	130				NR70
PFNA (Surrogate Recovery)	%	129				NR70
PFDA (Surrogate Recovery)	%	123				NR70
PFUdA (Surrogate Recovery)	%	124				NR70
PFDoA (Surrogate Recovery)	%	122				NR70
PFTeDA (Surrogate Recovery)	%	138				NR70
PFHxDA (Surrogate Recovery)	%	138				NR70
FOUEA (Surrogate Recovery)	%	86				NR70
PFBS (Surrogate Recovery)	%	119				NR70
PFHxS (Surrogate Recovery)	%	136				NR70
PFOS (Surrogate Recovery)	%	137				NR70
PFOSA (Surrogate Recovery)	%	124				NR70
N-MeFOSA (Surrogate Recovery)	%	136				NR70
N-EtFOSA (Surrogate Recovery)	%	117				NR70
N-MeFOSAA (Surrogate Recovery)	%	130				NR70
N-EtFOSAA (Surrogate Recovery)	%	142				NR70
N-MeFOSE (Surrogate Recovery)	%	114				NR70
N-EtFOSE (Surrogate Recovery)	%	110				NR70
4:2 FTS (Surrogate Recovery)	%	106				NR70
6:2 FTS (Surrogate Recovery)	%	130				NR70
8:2 FTS (Surrogate Recovery)	%	135				NR70
8:2 diPAP (Surrogate Recovery)	%	114				NR70
Dates						
Date extracted		1-MAY-2023				
Date analysed		1-MAY-2023				

N23/008174
PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

REPORT OF ANALYSIS

Lab Reg No.		N23/008174				
Date Sampled		17-APR-2023				
	Units					Method

[redacted]

04-MAY-2023

Lab Reg No.		N23/008174				
Date Sampled		17-APR-2023				
	Units					Method
Trace Elements						
Total Solids	%	49.8				NT2_49
Dates						
Date extracted		28-APR-2023				
Date analysed		1-MAY-2023				

[redacted]

04-MAY-2023

All results are expressed on a dry weight basis.

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/230427
	[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_3_1
		Date Received	: 27-APR-2023
Attention	: [redacted]	**Sampled By**	: [redacted]
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N23/008175	0861_QC200_230417	WATER 17/04/2023
N23/008176	0861_QC201_230417	WATER 17/04/2023
N23/008177	0861_QC202_230418	WATER 18/04/2023
N23/008178	0861_QC203_230418	WATER 18/04/2023

Lab Reg No.			N23/008175	N23/008176	N23/008177	N23/008178	
Date Sampled			17-APR-2023	17-APR-2023	18-APR-2023	18-APR-2023	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	<0.05	0.27	<0.05	0.21	NR70
PFPeA (2706-90-3)		ug/L	<0.02	0.45	<0.02	0.41	NR70
PFHxA (307-24-4)		ug/L	<0.01	0.67	0.011	0.64	NR70
PFHpA (375-85-9)		ug/L	<0.01	0.15	<0.01	0.15	NR70
PFOA (335-67-1)		ug/L	<0.01	0.15	<0.01	0.18	NR70
PFNA (375-95-1)		ug/L	<0.01	<0.01	<0.01	0.011	NR70
PFDA (335-76-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFPeS (2706-91-4)		ug/L	0.014	0.28	<0.01	0.27	NR70
PFHxS (355-46-4)		ug/L	0.084	1.8	0.033	1.8	NR70
PFHpS (375-92-8)		ug/L	<0.01	0.052	<0.01	0.059	NR70
PFOS (1763-23-1)		ug/L	0.16	2.0	0.077	1.5	NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFBS (375-73-5)		ug/L	0.028	0.35	<0.01	0.30	NR70
PFOSA (754-91-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70

REPORT OF ANALYSIS

Lab Reg No.			N23/008175	N23/008176	N23/008177	N23/008178	
Date Sampled			17-APR-2023	17-APR-2023	18-APR-2023	18-APR-2023	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)		ug/L	<0.01	<0.01	<0.01	0.16	NR70
8:2 FTS (39108-34-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)		%	107	96	87	96	NR70
PFPeA (Surrogate Recovery)		%	124	108	92	103	NR70
PFHxA (Surrogate Recovery)		%	104	86	86	90	NR70
PFHpA (Surrogate Recovery)		%	103	89	87	92	NR70
PFOA (Surrogate Recovery)		%	107	93	89	97	NR70
PFNA (Surrogate Recovery)		%	105	89	85	90	NR70
PFDA (Surrogate Recovery)		%	101	83	82	88	NR70
PFUdA (Surrogate Recovery)		%	101	75	76	77	NR70
PFDoA (Surrogate Recovery)		%	90	57	64	62	NR70
PFTeDA (Surrogate Recovery)		%	85	59	61	64	NR70
PFHxDA (Surrogate Recovery)		%	90	76	81	82	NR70
FOUEA (Surrogate Recovery)		%	82	67	61	70	NR70
PFBS (Surrogate Recovery)		%	106	87	78	88	NR70
PFHxS (Surrogate Recovery)		%	100	84	85	92	NR70
PFOS (Surrogate Recovery)		%	99	90	82	93	NR70
PFOSA (Surrogate Recovery)		%	82	57	55	64	NR70
N-MeFOSA (Surrogate Recovery)		%	60	37	36	44	NR70
N-EtFOSA (Surrogate Recovery)		%	52	30	30	37	NR70
N-MeFOSAA (Surrogate Recovery)		%	80	50	50	53	NR70
N-EtFOSAA (Surrogate Recovery)		%	86	52	55	55	NR70
N-MeFOSE (Surrogate Recovery)		%	59	36	37	43	NR70
N-EtFOSE (Surrogate Recovery)		%	58	34	36	39	NR70
4:2 FTS (Surrogate Recovery)		%	117	100	93	114	NR70
6:2 FTS (Surrogate Recovery)		%	91	81	75	89	NR70
8:2 FTS (Surrogate Recovery)		%	87	74	66	73	NR70
8:2 diPAP (Surrogate Recovery)		%	94	78	93	87	NR70
Dates							
Date extracted			28-APR-2023	28-APR-2023	28-APR-2023	28-APR-2023	
Date analysed			28-APR-2023	28-APR-2023	28-APR-2023	28-APR-2023	

N23/008175
to
N23/008180

[redacted]

PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

[redacted]

04-MAY-2023

REPORT OF ANALYSIS

Report No. RN1391403

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/230427
	[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_3_1
		Date Received	: 27-APR-2023
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP		
Your Client Services Manager	: Danny Slee	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N23/008179	0861_QC203_230419	WATER 19/04/2023
N23/008180	0861_QC204_230420	WATER 20/04/2023

Lab Reg No.			N23/008179	N23/008180			
Date Sampled			19-APR-2023	20-APR-2023			
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	0.093	<0.05			NR70
PFPeA (2706-90-3)		ug/L	0.031	<0.02			NR70
PFHxA (307-24-4)		ug/L	0.15	<0.01			NR70
PFHpA (375-85-9)		ug/L	0.024	<0.01			NR70
PFOA (335-67-1)		ug/L	0.039	<0.01			NR70
PFNA (375-95-1)		ug/L	<0.01	<0.01			NR70
PFDA (335-76-2)		ug/L	<0.01	<0.01			NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01			NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01			NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02			NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02			NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02			NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05			NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01			NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01			NR70
PFPeS (2706-91-4)		ug/L	0.18	<0.01			NR70
PFHxS (355-46-4)		ug/L	0.81	<0.01			NR70
PFHpS (375-92-8)		ug/L	<0.01	<0.01			NR70
PFOS (1763-23-1)		ug/L	0.17	<0.02			NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01			NR70
PFBS (375-73-5)		ug/L	0.25	<0.01			NR70
PFOSA (754-91-6)		ug/L	<0.01	<0.01			NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02			NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02			NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01			NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01			NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05			NR70
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05			NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01			NR70

REPORT OF ANALYSIS

Lab Reg No.			N23/008179	N23/008180			
Date Sampled			19-APR-2023	20-APR-2023			
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
6:2 FTS (27619-97-2)		ug/L	<0.01	<0.01			NR70
8:2 FTS (39108-34-4)		ug/L	<0.01	<0.01			NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01			NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02			NR70
PFBA (Surrogate Recovery)		%	86	87			NR70
PFPeA (Surrogate Recovery)		%	99	89			NR70
PFHxA (Surrogate Recovery)		%	79	85			NR70
PFHpA (Surrogate Recovery)		%	84	85			NR70
PFOA (Surrogate Recovery)		%	86	85			NR70
PFNA (Surrogate Recovery)		%	79	81			NR70
PFDA (Surrogate Recovery)		%	75	87			NR70
PFUdA (Surrogate Recovery)		%	70	83			NR70
PFDoA (Surrogate Recovery)		%	64	78			NR70
PFTeDA (Surrogate Recovery)		%	65	79			NR70
PFHxDA (Surrogate Recovery)		%	77	92			NR70
FOUEA (Surrogate Recovery)		%	64	73			NR70
PFBS (Surrogate Recovery)		%	79	80			NR70
PFHxS (Surrogate Recovery)		%	83	82			NR70
PFOS (Surrogate Recovery)		%	78	85			NR70
PFOSA (Surrogate Recovery)		%	57	70			NR70
N-MeFOSA (Surrogate Recovery)		%	36	53			NR70
N-EtFOSA (Surrogate Recovery)		%	31	47			NR70
N-MeFOSAA (Surrogate Recovery)		%	52	74			NR70
N-EtFOSAA (Surrogate Recovery)		%	51	81			NR70
N-MeFOSE (Surrogate Recovery)		%	39	57			NR70
N-EtFOSE (Surrogate Recovery)		%	39	58			NR70
4:2 FTS (Surrogate Recovery)		%	102	77			NR70
6:2 FTS (Surrogate Recovery)		%	78	66			NR70
8:2 FTS (Surrogate Recovery)		%	67	73			NR70
8:2 diPAP (Surrogate Recovery)		%	72	87			NR70
Dates							
Date extracted			28-APR-2023	28-APR-2023			
Date analysed			28-APR-2023	28-APR-2023			

[redacted]

04-MAY-2023

[redacted]

REPORT OF ANALYSIS

This Report supersedes reports: *RN1391209*

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
Chemical Accreditation 198: [redacted]

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/230427 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	122	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	102	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	105	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	105	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	101	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	98	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	100	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	105	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	112	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	105	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	103	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	99	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	111	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	100	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	108	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	97	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	104	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	98	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	94	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	94	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	103	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	88	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	106	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	109	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	104	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	108	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	108	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	95	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	104	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	115	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	108	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	113	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date:

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/230427 **Sample Matrix:** Solid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		mg/kg	mg/kg	mg/kg	mg/kg	%	%	%
PFBA (375-22-4)	NR70	0.002	<0.002	NA	NA	NA	111	NA
PFPeA (2706-90-3)	NR70	0.002	<0.002	NA	NA	NA	107	NA
PFHxA (307-24-4)	NR70	0.001	<0.001	NA	NA	NA	107	NA
PFHpA (375-85-9)	NR70	0.001	<0.001	NA	NA	NA	106	NA
PFOA (335-67-1)	NR70	0.001	<0.001	NA	NA	NA	112	NA
PFNA (375-95-1)	NR70	0.001	<0.001	NA	NA	NA	104	NA
PFDA (335-76-2)	NR70	0.001	<0.001	NA	NA	NA	115	NA
PFUdA (2058-94-8)	NR70	0.002	<0.002	NA	NA	NA	119	NA
PFDoA (307-55-1)	NR70	0.002	<0.002	NA	NA	NA	109	NA
PFTrDA (72629-94-8)	NR70	0.002	<0.002	NA	NA	NA	107	NA
PFTeDA (376-06-7)	NR70	0.002	<0.002	NA	NA	NA	105	NA
PFHxDA (67905-19-5)	NR70	0.002	<0.002	NA	NA	NA	111	NA
PFODA (16517-11-6)	NR70	0.005	<0.005	NA	NA	NA	99	NA
FOUEA (70887-84-2)	NR70	0.001	<0.001	NA	NA	NA	121	NA
PFBS (375-73-5)	NR70	0.001	<0.001	NA	NA	NA	110	NA
PFPeS (2706-91-4)	NR70	0.001	<0.001	NA	NA	NA	117	NA
PFHxS (355-46-4)	NR70	0.001	<0.001	NA	NA	NA	105	NA
PFHpS (375-92-8)	NR70	0.001	<0.001	NA	NA	NA	104	NA
PFOS (1763-23-1)	NR70	0.002	<0.002	NA	NA	NA	111	NA
PFNS (68259-12-1)	NR70	0.001	<0.001	NA	NA	NA	108	NA
PFDS (335-77-3)	NR70	0.001	<0.001	NA	NA	NA	105	NA
PFOSA (754-91-6)	NR70	0.001	<0.001	NA	NA	NA	101	NA
N-MeFOSA (31506-32-8)	NR70	0.002	<0.002	NA	NA	NA	89	NA
N-EtFOSA (4151-50-2)	NR70	0.002	<0.002	NA	NA	NA	111	NA
N-MeFOSAA (2355-31-9)	NR70	0.002	<0.002	NA	NA	NA	104	NA
N-EtFOSAA(2991-50-6)	NR70	0.002	<0.002	NA	NA	NA	110	NA
N-MeFOSE (24448-09-7)	NR70	0.005	<0.005	NA	NA	NA	113	NA
N-EtFOSE (1691-99-2)	NR70	0.005	<0.005	NA	NA	NA	116	NA
4:2 FTS (757124-72-4)	NR70	0.001	<0.001	NA	NA	NA	109	NA
6:2 FTS (27619-97-2)	NR70	0.001	<0.001	NA	NA	NA	111	NA
8:2 FTS (39108-34-4)	NR70	0.001	<0.001	NA	NA	NA	115	NA
10:2 FTS (120226-60-0)	NR70	0.002	<0.002	NA	NA	NA	116	NA
8:2 diPAP (678-41-1)	NR70	0.002	<0.002	NA	NA	NA	121	NA

Results expressed in percentage (%) or mg/kg wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date:

[redacted]

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

SAMPLE RECEIPT NOTIFICATION

CUSTOMER DETAILS

Attention: [redacted]

Customer: AECOM AUSTRALIA PTY LTD

Address: [redacted]

Email: [redacted]

Telephone: [redacted]

LABORATORY DETAILS

Lab: National Measurement Institute

Contact: Client Services

Address: [redacted]

Email: [redacted]

Telephone: [redacted]

SAMPLE DETAILS

NMI Job Name: AECO06/230503

Total No. of Samples: 4

LRNs	Estimated Report Date	Customer Sample ID	Lab Sample Description
N23/008561	10-MAY-2023	0861_QC206_230428	WATER 28/04/2023
N23/008562	10-MAY-2023	0861_QC205_230426	WATER 26/04/2023
N23/008563	10-MAY-2023	0861_QC209_230426	SEDIMENT 26/04/2023
N23/008564	10-MAY-2023	0861_QC210_230428	SEDIMENT 28/04/2023

SAMPLE RECEIVED CONDITION

Date samples received: 3-MAY-2023

Sample received in good order: Yes

NMI Quotation no. provided:

Client purchase order number: 60612563_3_1

Temperature of samples: Chilled

Comments:

Mode of Delivery:

Additional Terms and Conditions

Incomplete / unclear information about samples or required testing will delay the start of the analysis work

If you require your Purchase Order (PO) number to be included on our invoice, please provide the number during sample submission and before the completion of work to avoid unnecessary delays and/or additional processing/handling fees.

Alterations to Client requirements requested after commencement of testing may incur charges.

The lodgement of an order or receipt of samples for NMI services referenced in this Sample Receipt Notification constitutes an acceptence of the current version of NMI Terms and Conditions or other applicable Terms referenced in the NMI Quotation. NMI Terms and Conditions are available on the web at https://www.industry.gov.au/client-services/testing-and-analysis-services/chemical-and-biological-analysis-services-terms-and-conditions

REPORT OF ANALYSIS

Report No. RN1392055

Client	: [redacted]	**Job No.**	: AECO06/230503
		Quote No.	: QT-02232
		Order No.	: 60612563_3_1
		Date Received	: 03-MAY-2023
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	:		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N23/008563	0861_QC209_230426	SEDIMENT 26/04/2023
N23/008564	0861_QC210_230428	SEDIMENT 28/04/2023

Lab Reg No.		N23/008563	N23/008564			
Date Sampled		26-APR-2023	28-APR-2023			
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	mg/kg	<0.002	<0.002			NR70
PFPeA (2706-90-3)	mg/kg	<0.002	<0.002			NR70
PFHxA (307-24-4)	mg/kg	<0.001	0.0018			NR70
PFHpA (375-85-9)	mg/kg	<0.001	<0.001			NR70
PFOA (335-67-1)	mg/kg	<0.001	<0.001			NR70
PFNA (375-95-1)	mg/kg	<0.001	<0.001			NR70
PFDA (335-76-2)	mg/kg	<0.001	<0.001			NR70
PFUdA (2058-94-8)	mg/kg	<0.002	<0.002			NR70
PFDoA (307-55-1)	mg/kg	<0.002	<0.002			NR70
PFTrDA (72629-94-8)	mg/kg	<0.002	<0.002			NR70
PFTeDA (376-06-7)	mg/kg	<0.002	<0.002			NR70
PFHxDA (67905-19-5)	mg/kg	<0.002	<0.002			NR70
PFODA (16517-11-6)	mg/kg	<0.005	<0.005			NR70
FOUEA (70887-84-2)	mg/kg	<0.001	<0.001			NR70
PFBS (375-73-5)	mg/kg	<0.001	0.0017			NR70
PFPeS (2706-91-4)	mg/kg	<0.001	0.0017			NR70
PFHxS (355-46-4)	mg/kg	<0.001	0.013			NR70
PFHpS (375-92-8)	mg/kg	<0.001	<0.001			NR70
PFOS (1763-23-1)	mg/kg	<0.002	0.21			NR70
PFNS (68259-12-1)	mg/kg	<0.001	0.0013			NR70
PFDS (335-77-3)	mg/kg	<0.001	0.0024			NR70
PFOSA (754-91-6)	mg/kg	<0.001	0.0019			NR70
N-MeFOSA (31506-32-8)	mg/kg	<0.002	<0.002			NR70
N-EtFOSA (4151-50-2)	mg/kg	<0.002	<0.002			NR70
N-MeFOSAA (2355-31-9)	mg/kg	<0.002	<0.002			NR70
N-EtFOSAA(2991-50-6)	mg/kg	<0.002	<0.002			NR70
N-MeFOSE (24448-09-7)	mg/kg	<0.005	<0.005			NR70
N-EtFOSE (1691-99-2)	mg/kg	<0.005	<0.005			NR70
4:2 FTS (757124-72-4)	mg/kg	<0.001	<0.001			NR70

REPORT OF ANALYSIS

Lab Reg No.		N23/008563	N23/008564			
Date Sampled		26-APR-2023	28-APR-2023			
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
6:2 FTS (27619-97-2)	mg/kg	<0.001	<0.001			NR70
8:2 FTS (39108-34-4)	mg/kg	<0.001	<0.001			NR70
10:2 FTS (120226-60-0)	mg/kg	<0.002	<0.002			NR70
8:2 diPAP (678-41-1)	mg/kg	<0.002	<0.002			NR70
PFBA (Surrogate Recovery)	%	90	96			NR70
PFPeA (Surrogate Recovery)	%	93	95			NR70
PFHxA (Surrogate Recovery)	%	84	89			NR70
PFHpA (Surrogate Recovery)	%	95	99			NR70
PFOA (Surrogate Recovery)	%	98	97			NR70
PFNA (Surrogate Recovery)	%	94	93			NR70
PFDA (Surrogate Recovery)	%	98	102			NR70
PFUdA (Surrogate Recovery)	%	110	87			NR70
PFDoA (Surrogate Recovery)	%	107	83			NR70
PFTeDA (Surrogate Recovery)	%	101	111			NR70
PFHxDA (Surrogate Recovery)	%	101	49			NR70
FOUEA (Surrogate Recovery)	%	34	52			NR70
PFBS (Surrogate Recovery)	%	88	92			NR70
PFHxS (Surrogate Recovery)	%	88	98			NR70
PFOS (Surrogate Recovery)	%	95	100			NR70
PFOSA (Surrogate Recovery)	%	92	80			NR70
N-MeFOSA (Surrogate Recovery)	%	101	85			NR70
N-EtFOSA (Surrogate Recovery)	%	83	65			NR70
N-MeFOSAA (Surrogate Recovery)	%	95	92			NR70
N-EtFOSAA (Surrogate Recovery)	%	110	117			NR70
N-MeFOSE (Surrogate Recovery)	%	80	63			NR70
N-EtFOSE (Surrogate Recovery)	%	77	60			NR70
4:2 FTS (Surrogate Recovery)	%	78	89			NR70
6:2 FTS (Surrogate Recovery)	%	74	87			NR70
8:2 FTS (Surrogate Recovery)	%	85	87			NR70
8:2 diPAP (Surrogate Recovery)	%	125	103			NR70
Dates						
Date extracted		9-MAY-2023	9-MAY-2023			
Date analysed		9-MAY-2023	9-MAY-2023			

N23/008563
to
N23/008564

PFOS and PFHxS are quantified using a combined branched and linear standard,

REPORT OF ANALYSIS

linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

[redacted]

10-MAY-2023

Lab Reg No.		N23/008563	N23/008564			
Date Sampled		**26-APR-2023**	**28-APR-2023**			
	Units					**Method**
Trace Elements						
Total Solids	%	83.3	40.1			NT2_49
Dates						
Date extracted		8-MAY-2023	8-MAY-2023			
Date analysed		9-MAY-2023	9-MAY-2023			

[redacted]

10-MAY-2023

All results are expressed on a dry weight basis.

REPORT OF ANALYSIS

Report No. RN1392055

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/230503
	[redacted]	**Quote No.**	: QT-02232
	[redacted]	**Order No.**	: 60612563_3_1
		Date Received	: 03-MAY-2023
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	:		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N23/008561	0861_QC206_230428	WATER 28/04/2023
N23/008562	0861_QC205_230426	WATER 26/04/2023

Lab Reg No.			N23/008561	N23/008562			
Date Sampled			28-APR-2023	26-APR-2023			
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	0.44	<0.05			NR70
PFPeA (2706-90-3)		ug/L	0.89	<0.02			NR70
PFHxA (307-24-4)		ug/L	3.4	<0.01			NR70
PFHpA (375-85-9)		ug/L	1.0	<0.01			NR70
PFOA (335-67-1)		ug/L	2.4	<0.01			NR70
PFNA (375-95-1)		ug/L	0.072	<0.01			NR70
PFDA (335-76-2)		ug/L	0.013	<0.01			NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01			NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01			NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02			NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02			NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02			NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05			NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01			NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01			NR70
PFPeS (2706-91-4)		ug/L	2.7	0.045			NR70
PFHxS (355-46-4)		ug/L	30	0.23			NR70
PFHpS (375-92-8)		ug/L	2.3	<0.01			NR70
PFOS (1763-23-1)		ug/L	58	0.11			NR70
PFNS (68259-12-1)		ug/L	0.12	<0.01			NR70
PFBS (375-73-5)		ug/L	1.5	0.049			NR70
PFOSA (754-91-6)		ug/L	0.010	<0.01			NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02			NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02			NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01			NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01			NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05			NR70
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05			NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01			NR70

REPORT OF ANALYSIS

Lab Reg No.			N23/008561	N23/008562			
Date Sampled			28-APR-2023	26-APR-2023			
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
6:2 FTS (27619-97-2)		ug/L	0.052	<0.01			NR70
8:2 FTS (39108-34-4)		ug/L	0.053	<0.01			NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01			NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02			NR70
PFBA (Surrogate Recovery)		%	87	91			NR70
PFPeA (Surrogate Recovery)		%	89	89			NR70
PFHxA (Surrogate Recovery)		%	79	85			NR70
PFHpA (Surrogate Recovery)		%	99	94			NR70
PFOA (Surrogate Recovery)		%	90	93			NR70
PFNA (Surrogate Recovery)		%	54	91			NR70
PFDA (Surrogate Recovery)		%	94	88			NR70
PFUdA (Surrogate Recovery)		%	93	93			NR70
PFDoA (Surrogate Recovery)		%	90	91			NR70
PFTeDA (Surrogate Recovery)		%	92	95			NR70
PFHxDA (Surrogate Recovery)		%	105	90			NR70
FOUEA (Surrogate Recovery)		%	67	55			NR70
PFBS (Surrogate Recovery)		%	92	88			NR70
PFHxS (Surrogate Recovery)		%	50	89			NR70
PFOS (Surrogate Recovery)		%	90	91			NR70
PFOSA (Surrogate Recovery)		%	77	73			NR70
N-MeFOSA (Surrogate Recovery)		%	77	58			NR70
N-EtFOSA (Surrogate Recovery)		%	64	47			NR70
N-MeFOSAA (Surrogate Recovery)		%	87	80			NR70
N-EtFOSAA (Surrogate Recovery)		%	90	82			NR70
N-MeFOSE (Surrogate Recovery)		%	73	59			NR70
N-EtFOSE (Surrogate Recovery)		%	73	58			NR70
4:2 FTS (Surrogate Recovery)		%	86	74			NR70
6:2 FTS (Surrogate Recovery)		%	79	71			NR70
8:2 FTS (Surrogate Recovery)		%	75	78			NR70
8:2 diPAP (Surrogate Recovery)		%	138	121			NR70
Dates							
Date extracted			9-MAY-2023	9-MAY-2023			
Date analysed			9-MAY-2023	9-MAY-2023			

N23/008561
to
N23/008562

PFOS and PFHxS are quantified using a combined branched and linear standard,

[redacted]

REPORT OF ANALYSIS

linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
High PFAS surrogate recoveries accepted - results corrected for recovery.
Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

N23/008562

[redacted]

10-MAY-2023

This Report supersedes reports: *RN1392039*

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
Chemical Accreditation 198: [redacted]

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/230503 **Sample Matrix:** Solid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		mg/kg	mg/kg	mg/kg	mg/kg	%	%	%
PFBA (375-22-4)	NR70	0.002	<0.002	NA	NA	NA	112	NA
PFPeA (2706-90-3)	NR70	0.002	<0.002	NA	NA	NA	115	NA
PFHxA (307-24-4)	NR70	0.001	<0.001	NA	NA	NA	105	NA
PFHpA (375-85-9)	NR70	0.001	<0.001	NA	NA	NA	110	NA
PFOA (335-67-1)	NR70	0.001	<0.001	NA	NA	NA	107	NA
PFNA (375-95-1)	NR70	0.001	<0.001	NA	NA	NA	109	NA
PFDA (335-76-2)	NR70	0.001	<0.001	NA	NA	NA	115	NA
PFUdA (2058-94-8)	NR70	0.002	<0.002	NA	NA	NA	107	NA
PFDoA (307-55-1)	NR70	0.002	<0.002	NA	NA	NA	106	NA
PFTrDA (72629-94-8)	NR70	0.002	<0.002	NA	NA	NA	105	NA
PFTeDA (376-06-7)	NR70	0.002	<0.002	NA	NA	NA	108	NA
PFHxDA (67905-19-5)	NR70	0.002	<0.002	NA	NA	NA	107	NA
PFODA (16517-11-6)	NR70	0.005	<0.005	NA	NA	NA	109	NA
FOUEA (70887-84-2)	NR70	0.001	<0.001	NA	NA	NA	116	NA
PFBS (375-73-5)	NR70	0.001	<0.001	NA	NA	NA	100	NA
PFPeS (2706-91-4)	NR70	0.001	<0.001	NA	NA	NA	115	NA
PFHxS (355-46-4)	NR70	0.001	<0.001	NA	NA	NA	114	NA
PFHpS (375-92-8)	NR70	0.001	<0.001	NA	NA	NA	109	NA
PFOS (1763-23-1)	NR70	0.002	<0.002	NA	NA	NA	123	NA
PFNS (68259-12-1)	NR70	0.001	<0.001	NA	NA	NA	117	NA
PFDS (335-77-3)	NR70	0.001	<0.001	NA	NA	NA	129	NA
PFOSA (754-91-6)	NR70	0.001	<0.001	NA	NA	NA	106	NA
N-MeFOSA (31506-32-8)	NR70	0.002	<0.002	NA	NA	NA	92	NA
N-EtFOSA (4151-50-2)	NR70	0.002	<0.002	NA	NA	NA	107	NA
N-MeFOSAA (2355-31-9)	NR70	0.002	<0.002	NA	NA	NA	111	NA
N-EtFOSAA(2991-50-6)	NR70	0.002	<0.002	NA	NA	NA	104	NA
N-MeFOSE (24448-09-7)	NR70	0.005	<0.005	NA	NA	NA	116	NA
N-EtFOSE (1691-99-2)	NR70	0.005	<0.005	NA	NA	NA	118	NA
4:2 FTS (757124-72-4)	NR70	0.001	<0.001	NA	NA	NA	108	NA
6:2 FTS (27619-97-2)	NR70	0.001	<0.001	NA	NA	NA	119	NA
8:2 FTS (39108-34-4)	NR70	0.001	<0.001	NA	NA	NA	104	NA
10:2 FTS (120226-60-0)	NR70	0.002	<0.002	NA	NA	NA	104	NA
8:2 diPAP (678-41-1)	NR70	0.002	<0.002	NA	NA	NA	112	NA

Results expressed in percentage (%) or mg/kg wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date:

[redacted]

Australian Government
National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/230503 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	117	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	103	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	109	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	104	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	105	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	106	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	113	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	105	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	106	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	99	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	103	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	108	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	105	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	112	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	107	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	112	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	107	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	109	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	104	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	112	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	103	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	95	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	110	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	107	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	112	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	109	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	113	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	99	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	105	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	109	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	108	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	102	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date:

[redacted]

REPORT OF ANALYSIS

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/230427
	[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_3_1
		Date Received	: 27-APR-2023
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP_23		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N23/008174	0861_QC207_230417	SEDIMENT 17/04/2023

Lab Reg No.		N23/008174				
Date Sampled		17-APR-2023				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	mg/kg	<0.002				NR70
PFPeA (2706-90-3)	mg/kg	<0.002				NR70
PFHxA (307-24-4)	mg/kg	0.0017				NR70
PFHpA (375-85-9)	mg/kg	<0.001				NR70
PFOA (335-67-1)	mg/kg	<0.001				NR70
PFNA (375-95-1)	mg/kg	<0.001				NR70
PFDA (335-76-2)	mg/kg	<0.001				NR70
PFUdA (2058-94-8)	mg/kg	<0.002				NR70
PFDoA (307-55-1)	mg/kg	<0.002				NR70
PFTrDA (72629-94-8)	mg/kg	<0.002				NR70
PFTeDA (376-06-7)	mg/kg	<0.002				NR70
PFHxDA (67905-19-5)	mg/kg	<0.002				NR70
PFODA (16517-11-6)	mg/kg	<0.005				NR70
FOUEA (70887-84-2)	mg/kg	<0.001				NR70
PFBS (375-73-5)	mg/kg	<0.001				NR70
PFPeS (2706-91-4)	mg/kg	<0.001				NR70
PFHxS (355-46-4)	mg/kg	0.0040				NR70
PFHpS (375-92-8)	mg/kg	<0.001				NR70
PFOS (1763-23-1)	mg/kg	0.035				NR70
PFNS (68259-12-1)	mg/kg	<0.001				NR70
PFDS (335-77-3)	mg/kg	<0.001				NR70
PFOSA (754-91-6)	mg/kg	<0.001				NR70
N-MeFOSA (31506-32-8)	mg/kg	<0.002				NR70
N-EtFOSA (4151-50-2)	mg/kg	<0.002				NR70
N-MeFOSAA (2355-31-9)	mg/kg	<0.002				NR70
N-EtFOSAA(2991-50-6)	mg/kg	<0.002				NR70
N-MeFOSE (24448-09-7)	mg/kg	<0.005				NR70
N-EtFOSE (1691-99-2)	mg/kg	<0.005				NR70
4:2 FTS (757124-72-4)	mg/kg	<0.001				NR70
6:2 FTS (27619-97-2)	mg/kg	<0.001				NR70

REPORT OF ANALYSIS

Lab Reg No.		N23/008174				
Date Sampled		17-APR-2023				
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
8:2 FTS (39108-34-4)	mg/kg	<0.001				NR70
10:2 FTS (120226-60-0)	mg/kg	<0.002				NR70
8:2 diPAP (678-41-1)	mg/kg	<0.002				NR70
PFBA (Surrogate Recovery)	%	124				NR70
PFPeA (Surrogate Recovery)	%	118				NR70
PFHxA (Surrogate Recovery)	%	121				NR70
PFHpA (Surrogate Recovery)	%	133				NR70
PFOA (Surrogate Recovery)	%	130				NR70
PFNA (Surrogate Recovery)	%	129				NR70
PFDA (Surrogate Recovery)	%	123				NR70
PFUdA (Surrogate Recovery)	%	124				NR70
PFDoA (Surrogate Recovery)	%	122				NR70
PFTeDA (Surrogate Recovery)	%	138				NR70
PFHxDA (Surrogate Recovery)	%	138				NR70
FOUEA (Surrogate Recovery)	%	86				NR70
PFBS (Surrogate Recovery)	%	119				NR70
PFHxS (Surrogate Recovery)	%	136				NR70
PFOS (Surrogate Recovery)	%	137				NR70
PFOSA (Surrogate Recovery)	%	124				NR70
N-MeFOSA (Surrogate Recovery)	%	136				NR70
N-EtFOSA (Surrogate Recovery)	%	117				NR70
N-MeFOSAA (Surrogate Recovery)	%	130				NR70
N-EtFOSAA (Surrogate Recovery)	%	142				NR70
N-MeFOSE (Surrogate Recovery)	%	114				NR70
N-EtFOSE (Surrogate Recovery)	%	110				NR70
4:2 FTS (Surrogate Recovery)	%	106				NR70
6:2 FTS (Surrogate Recovery)	%	130				NR70
8:2 FTS (Surrogate Recovery)	%	135				NR70
8:2 diPAP (Surrogate Recovery)	%	114				NR70
Dates						
Date extracted		1-MAY-2023				
Date analysed		1-MAY-2023				

N23/008174
PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

REPORT OF ANALYSIS

Lab Reg No.		N23/008174				
Date Sampled		17-APR-2023				
	Units					Method

[redacted]

22-MAY-2023

Lab Reg No.		N23/008174				
Date Sampled		17-APR-2023				
	Units					Method
Trace Elements						
Total Solids	%	49.8				NT2_49
Dates						
Date extracted		28-APR-2023				
Date analysed		1-MAY-2023				

[redacted]

22-MAY-2023

All results are expressed on a dry weight basis.

REPORT OF ANALYSIS

Report No. RN1393124

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/230427
	[redacted]	**Quote No.**	: QT-02018
		Order No.	: 60612563_3_1
		Date Received	: 27-APR-2023
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP_23		
Your Client Services Manager	: Danny Slee	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N23/008175	0861_QC200_230417	WATER 17/04/2023
N23/008176	0861_QC201_230417	WATER 17/04/2023
N23/008177	0861_QC202_230418	WATER 18/04/2023
N23/008178	0861_QC203_230418	WATER 18/04/2023

Lab Reg No.			N23/008175	N23/008176	N23/008177	N23/008178	
Date Sampled			17-APR-2023	17-APR-2023	18-APR-2023	18-APR-2023	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	<0.05	0.27	<0.05	0.21	NR70
PFPeA (2706-90-3)		ug/L	<0.02	0.45	<0.02	0.41	NR70
PFHxA (307-24-4)		ug/L	<0.01	0.67	0.011	0.64	NR70
PFHpA (375-85-9)		ug/L	<0.01	0.15	<0.01	0.15	NR70
PFOA (335-67-1)		ug/L	<0.01	0.15	<0.01	0.18	NR70
PFNA (375-95-1)		ug/L	<0.01	<0.01	<0.01	0.011	NR70
PFDA (335-76-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFPeS (2706-91-4)		ug/L	0.014	0.28	<0.01	0.27	NR70
PFHxS (355-46-4)		ug/L	0.084	1.8	0.033	1.8	NR70
PFHpS (375-92-8)		ug/L	<0.01	0.052	<0.01	0.059	NR70
PFOS (1763-23-1)		ug/L	0.16	2.0	0.077	1.5	NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
PFBS (375-73-5)		ug/L	0.028	0.35	<0.01	0.30	NR70
PFOSA (754-91-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70

REPORT OF ANALYSIS

Lab Reg No.			N23/008175	N23/008176	N23/008177	N23/008178	
Date Sampled			17-APR-2023	17-APR-2023	18-APR-2023	18-APR-2023	
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05	<0.05	<0.05	NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
6:2 FTS (27619-97-2)		ug/L	<0.01	<0.01	<0.01	0.16	NR70
8:2 FTS (39108-34-4)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01	<0.01	<0.01	NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02	<0.02	<0.02	NR70
PFBA (Surrogate Recovery)		%	107	96	87	96	NR70
PFPeA (Surrogate Recovery)		%	124	108	92	103	NR70
PFHxA (Surrogate Recovery)		%	104	86	86	90	NR70
PFHpA (Surrogate Recovery)		%	103	89	87	92	NR70
PFOA (Surrogate Recovery)		%	107	93	89	97	NR70
PFNA (Surrogate Recovery)		%	105	89	85	90	NR70
PFDA (Surrogate Recovery)		%	101	83	82	88	NR70
PFUdA (Surrogate Recovery)		%	101	75	76	77	NR70
PFDoA (Surrogate Recovery)		%	90	57	64	62	NR70
PFTeDA (Surrogate Recovery)		%	85	59	61	64	NR70
PFHxDA (Surrogate Recovery)		%	90	76	81	82	NR70
FOUEA (Surrogate Recovery)		%	82	67	61	70	NR70
PFBS (Surrogate Recovery)		%	106	87	78	88	NR70
PFHxS (Surrogate Recovery)		%	100	84	85	92	NR70
PFOS (Surrogate Recovery)		%	99	90	82	93	NR70
PFOSA (Surrogate Recovery)		%	82	57	55	64	NR70
N-MeFOSA (Surrogate Recovery)		%	60	37	36	44	NR70
N-EtFOSA (Surrogate Recovery)		%	52	30	30	37	NR70
N-MeFOSAA (Surrogate Recovery)		%	80	50	50	53	NR70
N-EtFOSAA (Surrogate Recovery)		%	86	52	55	55	NR70
N-MeFOSE (Surrogate Recovery)		%	59	36	37	43	NR70
N-EtFOSE (Surrogate Recovery)		%	58	34	36	39	NR70
4:2 FTS (Surrogate Recovery)		%	117	100	93	114	NR70
6:2 FTS (Surrogate Recovery)		%	91	81	75	89	NR70
8:2 FTS (Surrogate Recovery)		%	87	74	66	73	NR70
8:2 diPAP (Surrogate Recovery)		%	94	78	93	87	NR70
Dates							
Date extracted			28-APR-2023	28-APR-2023	28-APR-2023	28-APR-2023	
Date analysed			28-APR-2023	28-APR-2023	28-APR-2023	28-APR-2023	

N23/008175
to
N23/008180

REPORT OF ANALYSIS

PFOS and PFHxS are quantified using a combined branched and linear standard,
linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

[redacted]

REPORT OF ANALYSIS

Report No. RN1393124

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/230427
	[redacted]	**Quote No.**	: QT-02018
	[redacted]	**Order No.**	: 60612563_3_1
		Date Received	: 27-APR-2023
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP_23		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N23/008179	0861_QC203_230419	WATER 19/04/2023
N23/008180	0861_QC204_230420	WATER 20/04/2023

Lab Reg No.			N23/008179	N23/008180			
Date Sampled			19-APR-2023	20-APR-2023			
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	0.093	<0.05			NR70
PFPeA (2706-90-3)		ug/L	0.031	<0.02			NR70
PFHxA (307-24-4)		ug/L	0.15	<0.01			NR70
PFHpA (375-85-9)		ug/L	0.024	<0.01			NR70
PFOA (335-67-1)		ug/L	0.039	<0.01			NR70
PFNA (375-95-1)		ug/L	<0.01	<0.01			NR70
PFDA (335-76-2)		ug/L	<0.01	<0.01			NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01			NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01			NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02			NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02			NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02			NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05			NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01			NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01			NR70
PFPeS (2706-91-4)		ug/L	0.18	<0.01			NR70
PFHxS (355-46-4)		ug/L	0.81	<0.01			NR70
PFHpS (375-92-8)		ug/L	<0.01	<0.01			NR70
PFOS (1763-23-1)		ug/L	0.17	<0.02			NR70
PFNS (68259-12-1)		ug/L	<0.01	<0.01			NR70
PFBS (375-73-5)		ug/L	0.25	<0.01			NR70
PFOSA (754-91-6)		ug/L	<0.01	<0.01			NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02			NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02			NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01			NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01			NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05			NR70
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05			NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01			NR70

REPORT OF ANALYSIS

Lab Reg No.			N23/008179	N23/008180			
Date Sampled			19-APR-2023	20-APR-2023			
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
6:2 FTS (27619-97-2)		ug/L	<0.01	<0.01			NR70
8:2 FTS (39108-34-4)		ug/L	<0.01	<0.01			NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01			NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02			NR70
PFBA (Surrogate Recovery)		%	86	87			NR70
PFPeA (Surrogate Recovery)		%	99	89			NR70
PFHxA (Surrogate Recovery)		%	79	85			NR70
PFHpA (Surrogate Recovery)		%	84	85			NR70
PFOA (Surrogate Recovery)		%	86	85			NR70
PFNA (Surrogate Recovery)		%	79	81			NR70
PFDA (Surrogate Recovery)		%	75	87			NR70
PFUdA (Surrogate Recovery)		%	70	83			NR70
PFDoA (Surrogate Recovery)		%	64	78			NR70
PFTeDA (Surrogate Recovery)		%	65	79			NR70
PFHxDA (Surrogate Recovery)		%	77	92			NR70
FOUEA (Surrogate Recovery)		%	64	73			NR70
PFBS (Surrogate Recovery)		%	79	80			NR70
PFHxS (Surrogate Recovery)		%	83	82			NR70
PFOS (Surrogate Recovery)		%	78	85			NR70
PFOSA (Surrogate Recovery)		%	57	70			NR70
N-MeFOSA (Surrogate Recovery)		%	36	53			NR70
N-EtFOSA (Surrogate Recovery)		%	31	47			NR70
N-MeFOSAA (Surrogate Recovery)		%	52	74			NR70
N-EtFOSAA (Surrogate Recovery)		%	51	81			NR70
N-MeFOSE (Surrogate Recovery)		%	39	57			NR70
N-EtFOSE (Surrogate Recovery)		%	39	58			NR70
4:2 FTS (Surrogate Recovery)		%	102	77			NR70
6:2 FTS (Surrogate Recovery)		%	78	66			NR70
8:2 FTS (Surrogate Recovery)		%	67	73			NR70
8:2 diPAP (Surrogate Recovery)		%	72	87			NR70
Dates							
Date extracted			28-APR-2023	28-APR-2023			
Date analysed			28-APR-2023	28-APR-2023			

[redacted]

22-MAY-2023

[redacted]

REPORT OF ANALYSIS

This Report supersedes reports: *RN1391209*
RN1391403

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
Chemical Accreditation 198: [redacted]

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/230427/1 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	122	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	102	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	105	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	105	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	101	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	98	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	100	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	105	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	112	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	105	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	103	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	99	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	111	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	100	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	108	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	97	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	104	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	98	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	94	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	94	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	103	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	88	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	106	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	109	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	104	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	108	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	108	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	95	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	104	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	115	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	108	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	113	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date:

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/230427/1 **Sample Matrix:** Solid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		mg/kg	mg/kg	mg/kg	mg/kg	%	%	%
PFBA (375-22-4)	NR70	0.002	<0.002	NA	NA	NA	111	NA
PFPeA (2706-90-3)	NR70	0.002	<0.002	NA	NA	NA	107	NA
PFHxA (307-24-4)	NR70	0.001	<0.001	NA	NA	NA	107	NA
PFHpA (375-85-9)	NR70	0.001	<0.001	NA	NA	NA	106	NA
PFOA (335-67-1)	NR70	0.001	<0.001	NA	NA	NA	112	NA
PFNA (375-95-1)	NR70	0.001	<0.001	NA	NA	NA	104	NA
PFDA (335-76-2)	NR70	0.001	<0.001	NA	NA	NA	115	NA
PFUdA (2058-94-8)	NR70	0.002	<0.002	NA	NA	NA	119	NA
PFDoA (307-55-1)	NR70	0.002	<0.002	NA	NA	NA	109	NA
PFTrDA (72629-94-8)	NR70	0.002	<0.002	NA	NA	NA	107	NA
PFTeDA (376-06-7)	NR70	0.002	<0.002	NA	NA	NA	105	NA
PFHxDA (67905-19-5)	NR70	0.002	<0.002	NA	NA	NA	111	NA
PFODA (16517-11-6)	NR70	0.005	<0.005	NA	NA	NA	99	NA
FOUEA (70887-84-2)	NR70	0.001	<0.001	NA	NA	NA	121	NA
PFBS (375-73-5)	NR70	0.001	<0.001	NA	NA	NA	110	NA
PFPeS (2706-91-4)	NR70	0.001	<0.001	NA	NA	NA	117	NA
PFHxS (355-46-4)	NR70	0.001	<0.001	NA	NA	NA	105	NA
PFHpS (375-92-8)	NR70	0.001	<0.001	NA	NA	NA	104	NA
PFOS (1763-23-1)	NR70	0.002	<0.002	NA	NA	NA	111	NA
PFNS (68259-12-1)	NR70	0.001	<0.001	NA	NA	NA	108	NA
PFDS (335-77-3)	NR70	0.001	<0.001	NA	NA	NA	105	NA
PFOSA (754-91-6)	NR70	0.001	<0.001	NA	NA	NA	101	NA
N-MeFOSA (31506-32-8)	NR70	0.002	<0.002	NA	NA	NA	89	NA
N-EtFOSA (4151-50-2)	NR70	0.002	<0.002	NA	NA	NA	111	NA
N-MeFOSAA (2355-31-9)	NR70	0.002	<0.002	NA	NA	NA	104	NA
N-EtFOSAA(2991-50-6)	NR70	0.002	<0.002	NA	NA	NA	110	NA
N-MeFOSE (24448-09-7)	NR70	0.005	<0.005	NA	NA	NA	113	NA
N-EtFOSE (1691-99-2)	NR70	0.005	<0.005	NA	NA	NA	116	NA
4:2 FTS (757124-72-4)	NR70	0.001	<0.001	NA	NA	NA	109	NA
6:2 FTS (27619-97-2)	NR70	0.001	<0.001	NA	NA	NA	111	NA
8:2 FTS (39108-34-4)	NR70	0.001	<0.001	NA	NA	NA	115	NA
10:2 FTS (120226-60-0)	NR70	0.002	<0.002	NA	NA	NA	116	NA
8:2 diPAP (678-41-1)	NR70	0.002	<0.002	NA	NA	NA	121	NA

Results expressed in percentage (%) or mg/kg wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed:

Date:

Australian Government
Department of Industry, Science and Resources

National Measurement Institute

NATA

REPORT OF ANALYSIS

Report No. RN1393133

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/230503
	[redacted]	**Quote No.**	: QT-02232
	[redacted]	**Order No.**	: 60612563_3_1
		Date Received	: 03-MAY-2023
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP_23		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N23/008563	0861_QC209_230426	SEDIMENT 26/04/2023
N23/008564	0861_QC210_230428	SEDIMENT 28/04/2023

Lab Reg No.		N23/008563	N23/008564			
Date Sampled		26-APR-2023	28-APR-2023			
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
PFBA (375-22-4)	mg/kg	<0.002	<0.002			NR70
PFPeA (2706-90-3)	mg/kg	<0.002	<0.002			NR70
PFHxA (307-24-4)	mg/kg	<0.001	0.0018			NR70
PFHpA (375-85-9)	mg/kg	<0.001	<0.001			NR70
PFOA (335-67-1)	mg/kg	<0.001	<0.001			NR70
PFNA (375-95-1)	mg/kg	<0.001	<0.001			NR70
PFDA (335-76-2)	mg/kg	<0.001	<0.001			NR70
PFUdA (2058-94-8)	mg/kg	<0.002	<0.002			NR70
PFDoA (307-55-1)	mg/kg	<0.002	<0.002			NR70
PFTrDA (72629-94-8)	mg/kg	<0.002	<0.002			NR70
PFTeDA (376-06-7)	mg/kg	<0.002	<0.002			NR70
PFHxDA (67905-19-5)	mg/kg	<0.002	<0.002			NR70
PFODA (16517-11-6)	mg/kg	<0.005	<0.005			NR70
FOUEA (70887-84-2)	mg/kg	<0.001	<0.001			NR70
PFBS (375-73-5)	mg/kg	<0.001	0.0017			NR70
PFPeS (2706-91-4)	mg/kg	<0.001	0.0017			NR70
PFHxS (355-46-4)	mg/kg	<0.001	0.013			NR70
PFHpS (375-92-8)	mg/kg	<0.001	<0.001			NR70
PFOS (1763-23-1)	mg/kg	<0.002	0.21			NR70
PFNS (68259-12-1)	mg/kg	<0.001	0.0013			NR70
PFDS (335-77-3)	mg/kg	<0.001	0.0024			NR70
PFOSA (754-91-6)	mg/kg	<0.001	0.0019			NR70
N-MeFOSA (31506-32-8)	mg/kg	<0.002	<0.002			NR70
N-EtFOSA (4151-50-2)	mg/kg	<0.002	<0.002			NR70
N-MeFOSAA (2355-31-9)	mg/kg	<0.002	<0.002			NR70
N-EtFOSAA(2991-50-6)	mg/kg	<0.002	<0.002			NR70
N-MeFOSE (24448-09-7)	mg/kg	<0.005	<0.005			NR70
N-EtFOSE (1691-99-2)	mg/kg	<0.005	<0.005			NR70
4:2 FTS (757124-72-4)	mg/kg	<0.001	<0.001			NR70

REPORT OF ANALYSIS

Lab Reg No.		N23/008563	N23/008564			
Date Sampled		26-APR-2023	28-APR-2023			
	Units					Method
PFAS (per-and poly-fluoroalkyl substances)						
6:2 FTS (27619-97-2)	mg/kg	<0.001	<0.001			NR70
8:2 FTS (39108-34-4)	mg/kg	<0.001	<0.001			NR70
10:2 FTS (120226-60-0)	mg/kg	<0.002	<0.002			NR70
8:2 diPAP (678-41-1)	mg/kg	<0.002	<0.002			NR70
PFBA (Surrogate Recovery)	%	90	96			NR70
PFPeA (Surrogate Recovery)	%	93	95			NR70
PFHxA (Surrogate Recovery)	%	84	89			NR70
PFHpA (Surrogate Recovery)	%	95	99			NR70
PFOA (Surrogate Recovery)	%	98	97			NR70
PFNA (Surrogate Recovery)	%	94	93			NR70
PFDA (Surrogate Recovery)	%	98	102			NR70
PFUdA (Surrogate Recovery)	%	110	87			NR70
PFDoA (Surrogate Recovery)	%	107	83			NR70
PFTeDA (Surrogate Recovery)	%	101	111			NR70
PFHxDA (Surrogate Recovery)	%	101	49			NR70
FOUEA (Surrogate Recovery)	%	34	52			NR70
PFBS (Surrogate Recovery)	%	88	92			NR70
PFHxS (Surrogate Recovery)	%	88	98			NR70
PFOS (Surrogate Recovery)	%	95	100			NR70
PFOSA (Surrogate Recovery)	%	92	80			NR70
N-MeFOSA (Surrogate Recovery)	%	101	85			NR70
N-EtFOSA (Surrogate Recovery)	%	83	65			NR70
N-MeFOSAA (Surrogate Recovery)	%	95	92			NR70
N-EtFOSAA (Surrogate Recovery)	%	110	117			NR70
N-MeFOSE (Surrogate Recovery)	%	80	63			NR70
N-EtFOSE (Surrogate Recovery)	%	77	60			NR70
4:2 FTS (Surrogate Recovery)	%	78	89			NR70
6:2 FTS (Surrogate Recovery)	%	74	87			NR70
8:2 FTS (Surrogate Recovery)	%	85	87			NR70
8:2 diPAP (Surrogate Recovery)	%	125	103			NR70
Dates						
Date extracted		9-MAY-2023	9-MAY-2023			
Date analysed		9-MAY-2023	9-MAY-2023			

N23/008563
to
N23/008564

PFOS and PFHxS are quantified using a combined branched and linear standard,

[redacted]

REPORT OF ANALYSIS

linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

[redacted]

22-MAY-2023

Lab Reg No.		N23/008563	N23/008564			
Date Sampled		**26-APR-2023**	**28-APR-2023**			
	Units					**Method**
Trace Elements						
Total Solids	%	83.3	40.1			NT2_49
Dates						
Date extracted		8-MAY-2023	8-MAY-2023			
Date analysed		9-MAY-2023	9-MAY-2023			

[redacted]

22-MAY-2023

All results are expressed on a dry weight basis.

REPORT OF ANALYSIS

Report No. RN1393133

Client	: AECOM AUSTRALIA PTY LTD	**Job No.**	: AECO06/230503
	[redacted]	**Quote No.**	: QT-02232
	[redacted]	**Order No.**	: 60612563_3_1
		Date Received	: 03-MAY-2023
Attention	: [redacted]	**Sampled By**	: CLIENT
Project Name	: QLD_0861_PFASOMP_23		
Your Client Services Manager	: [redacted]	**Phone**	: [redacted]

Lab Reg No.	Sample Ref	Sample Description
N23/008561	0861_QC206_230428	WATER 28/04/2023
N23/008562	0861_QC205_230426	WATER 26/04/2023

Lab Reg No.			N23/008561	N23/008562			
Date Sampled			28-APR-2023	26-APR-2023			
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
PFBA (375-22-4)		ug/L	0.44	<0.05			NR70
PFPeA (2706-90-3)		ug/L	0.89	<0.02			NR70
PFHxA (307-24-4)		ug/L	3.4	<0.01			NR70
PFHpA (375-85-9)		ug/L	1.0	<0.01			NR70
PFOA (335-67-1)		ug/L	2.4	<0.01			NR70
PFNA (375-95-1)		ug/L	0.072	<0.01			NR70
PFDA (335-76-2)		ug/L	0.013	<0.01			NR70
PFUdA (2058-94-8)		ug/L	<0.01	<0.01			NR70
PFDoA (307-55-1)		ug/L	<0.01	<0.01			NR70
PFTrDA (72629-94-8)		ug/L	<0.02	<0.02			NR70
PFTeDA (376-06-7)		ug/L	<0.02	<0.02			NR70
PFHxDA (67905-19-5)		ug/L	<0.02	<0.02			NR70
PFODA (16517-11-6)		ug/L	<0.05	<0.05			NR70
FOUEA (70887-84-2)		ug/L	<0.01	<0.01			NR70
PFDS (335-77-3)		ug/L	<0.01	<0.01			NR70
PFPeS (2706-91-4)		ug/L	2.7	0.045			NR70
PFHxS (355-46-4)		ug/L	30	0.23			NR70
PFHpS (375-92-8)		ug/L	2.3	<0.01			NR70
PFOS (1763-23-1)		ug/L	58	0.11			NR70
PFNS (68259-12-1)		ug/L	0.12	<0.01			NR70
PFBS (375-73-5)		ug/L	1.5	0.049			NR70
PFOSA (754-91-6)		ug/L	0.010	<0.01			NR70
N-MeFOSA (31506-32-8)		ug/L	<0.02	<0.02			NR70
N-EtFOSA (4151-50-2)		ug/L	<0.02	<0.02			NR70
N-MeFOSAA (2355-31-9)		ug/L	<0.01	<0.01			NR70
N-EtFOSAA(2991-50-6)		ug/L	<0.01	<0.01			NR70
N-MeFOSE (24448-09-7)		ug/L	<0.05	<0.05			NR70
N-EtFOSE (1691-99-2)		ug/L	<0.05	<0.05			NR70
4:2 FTS (757124-72-4)		ug/L	<0.01	<0.01			NR70

REPORT OF ANALYSIS

Lab Reg No.			N23/008561	N23/008562			
Date Sampled			28-APR-2023	26-APR-2023			
		Units					Method
PFAS (per-and poly-fluoroalkyl substances)							
6:2 FTS (27619-97-2)		ug/L	0.052	<0.01			NR70
8:2 FTS (39108-34-4)		ug/L	0.053	<0.01			NR70
10:2 FTS (120226-60-0)		ug/L	<0.01	<0.01			NR70
8:2 diPAP (678-41-1)		ug/L	<0.02	<0.02			NR70
PFBA (Surrogate Recovery)		%	87	91			NR70
PFPeA (Surrogate Recovery)		%	89	89			NR70
PFHxA (Surrogate Recovery)		%	79	85			NR70
PFHpA (Surrogate Recovery)		%	99	94			NR70
PFOA (Surrogate Recovery)		%	90	93			NR70
PFNA (Surrogate Recovery)		%	54	91			NR70
PFDA (Surrogate Recovery)		%	94	88			NR70
PFUdA (Surrogate Recovery)		%	93	93			NR70
PFDoA (Surrogate Recovery)		%	90	91			NR70
PFTeDA (Surrogate Recovery)		%	92	95			NR70
PFHxDA (Surrogate Recovery)		%	105	90			NR70
FOUEA (Surrogate Recovery)		%	67	55			NR70
PFBS (Surrogate Recovery)		%	92	88			NR70
PFHxS (Surrogate Recovery)		%	50	89			NR70
PFOS (Surrogate Recovery)		%	90	91			NR70
PFOSA (Surrogate Recovery)		%	77	73			NR70
N-MeFOSA (Surrogate Recovery)		%	77	58			NR70
N-EtFOSA (Surrogate Recovery)		%	64	47			NR70
N-MeFOSAA (Surrogate Recovery)		%	87	80			NR70
N-EtFOSAA (Surrogate Recovery)		%	90	82			NR70
N-MeFOSE (Surrogate Recovery)		%	73	59			NR70
N-EtFOSE (Surrogate Recovery)		%	73	58			NR70
4:2 FTS (Surrogate Recovery)		%	86	74			NR70
6:2 FTS (Surrogate Recovery)		%	79	71			NR70
8:2 FTS (Surrogate Recovery)		%	75	78			NR70
8:2 diPAP (Surrogate Recovery)		%	138	121			NR70
Dates							
Date extracted			9-MAY-2023	9-MAY-2023			
Date analysed			9-MAY-2023	9-MAY-2023			

N23/008561
to
N23/008562

PFOS and PFHxS are quantified using a combined branched and linear standard,

REPORT OF ANALYSIS

linear and branched isomers are totalled for reporting.
All results corrected for labelled surrogate recoveries.

Selected PFAS surrogate recoveries are biased due to matrix effects.ô
High PFAS surrogate recoveries accepted - results corrected for recovery.
Surrogate recoveries low for selected analytes - PFAS LORs not raised since S/N >10.

N23/008562

[redacted]

22-MAY-2023

This Report supersedes reports: *RN1392039*
RN1392055

Measurement Uncertainty is available upon request.

Note: Sampling date(s) have been provided by the client.
Chemical Accreditation 198: [redacted]

[redacted]

Australian Government

National Measurement Institute

QUALITY ASSURANCE REPORT

Client: AECOM AUSTRALIA PTY LTD

NMI QA Report No: AECO06/230503 **Sample Matrix:** Liquid

Analyte	Method	LOR	Blank	Sample Duplicates			Recoveries	
				Sample	Duplicate	RPD	LCS	Matrix Spike
		ug/L	ug/L	ug/L	ug/L	%	%	%
PFBA (375-22-4)	NR70	0.05	<0.05	NA	NA	NA	117	NA
PFPeA (2706-90-3)	NR70	0.02	<0.02	NA	NA	NA	103	NA
PFHxA (307-24-4)	NR70	0.01	<0.01	NA	NA	NA	109	NA
PFHpA (375-85-9)	NR70	0.01	<0.01	NA	NA	NA	104	NA
PFOA (335-67-1)	NR70	0.01	<0.01	NA	NA	NA	105	NA
PFNA (375-95-1)	NR70	0.01	<0.01	NA	NA	NA	106	NA
PFDA (335-76-2)	NR70	0.01	<0.01	NA	NA	NA	113	NA
PFUdA (2058-94-8)	NR70	0.01	<0.01	NA	NA	NA	105	NA
PFDoA (307-55-1)	NR70	0.01	<0.01	NA	NA	NA	106	NA
PFTrDA (72629-94-8)	NR70	0.02	<0.02	NA	NA	NA	99	NA
PFTeDA (376-06-7)	NR70	0.02	<0.02	NA	NA	NA	103	NA
PFHxDA (67905-19-5)	NR70	0.02	<0.02	NA	NA	NA	108	NA
PFODA (16517-11-6)	NR70	0.05	<0.05	NA	NA	NA	105	NA
FOUEA (70887-84-2)	NR70	0.01	<0.01	NA	NA	NA	112	NA
PFBS (375-73-5)	NR70	0.01	<0.01	NA	NA	NA	107	NA
PFPeS (2706-91-4)	NR70	0.01	<0.01	NA	NA	NA	112	NA
PFHxS (355-46-4)	NR70	0.01	<0.01	NA	NA	NA	107	NA
PFHpS (375-92-8)	NR70	0.01	<0.01	NA	NA	NA	102	NA
PFOS (1763-23-1)	NR70	0.02	<0.02	NA	NA	NA	109	NA
PFNS (68259-12-1)	NR70	0.01	<0.01	NA	NA	NA	104	NA
PFDS (335-77-3)	NR70	0.01	<0.01	NA	NA	NA	112	NA
PFOSA (754-91-6)	NR70	0.01	<0.01	NA	NA	NA	103	NA
N-MeFOSA (31506-32-8)	NR70	0.02	<0.02	NA	NA	NA	95	NA
N-EtFOSA (4151-50-2)	NR70	0.02	<0.02	NA	NA	NA	110	NA
N-MeFOSAA (2355-31-9)	NR70	0.01	<0.01	NA	NA	NA	107	NA
N-EtFOSAA(2991-50-6)	NR70	0.01	<0.01	NA	NA	NA	112	NA
N-MeFOSE (24448-09-7)	NR70	0.05	<0.05	NA	NA	NA	109	NA
N-EtFOSE (1691-99-2)	NR70	0.05	<0.05	NA	NA	NA	113	NA
4:2 FTS (757124-72-4)	NR70	0.01	<0.01	NA	NA	NA	99	NA
6:2 FTS (27619-97-2)	NR70	0.01	<0.01	NA	NA	NA	105	NA
8:2 FTS (39108-34-4)	NR70	0.01	<0.01	NA	NA	NA	109	NA
10:2 FTS (120226-60-0)	NR70	0.01	<0.01	NA	NA	NA	108	NA
8:2 diPAP (678-41-1)	NR70	0.02	<0.02	NA	NA	NA	102	NA

Results expressed in percentage (%) or ug/L wherever appropriate.
Acceptable Spike recovery is 50-150%.
Maximum acceptable RPDs on spikes and duplicates is 40%.
'NA ' = Not Applicable.
RPD= Relative Percentage Difference.

Signed: [redacted]

Date:

[redacted]

Appendix F

Equipment Calibration Certificates

Appendix F Equipment Calibration Certificates

Oil / Water Interface Meter

Instrument Interface Meter (60M)
Serial No. 312447

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: [redacted]

Calibration date: **13-Apr-23**

Next calibration due: **30/02/2024**

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 10H100314

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.00		393774	pH 7.0
2. pH 4.00		pH 4.00		399527	pH 4.0
3. ORP		231.42mV		401308/395763	231.86mV
4. EC		2760uS		396172	2760uS
5. D.O		100%			99.9% - 756.4mmHg
6. Temp		23.9oC		MultiTherm 09000528	23.7oC

Calibrated by: [redacted]

Calibration date: **13-Apr-23**

Next calibration due: **12/10/2023**

.

Oil / Water Interface Meter

Instrument Interface Meter (60M)
Serial No. 483917

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: [redacted]

Calibration date: **13-Apr-23**

Next calibration due: **12/06/2023**

Multi Parameter Water Meter

Instrument **YSI Quatro Pro Plus**
Serial No. **20M100099**

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.0		393774	pH 7.0
2. pH 4.00		pH 4.0		399527	pH 4.0
3. ORP		232.74mV		401308/395763	232.74mV
4. EC		2760uS		396172	2760uS
5. D.O		100%		Fresh Air	99.9% - 756.4mmHg
6. Temp		23.3oC		MultiTherm 09000528	23.3oC

Calibrated by: [redacted]

Calibration date: **13-Apr-23**

Next calibration due: **13/10/2023**

Oil / Water Interface Meter

Instrument Interface Meter (60M)
Serial No. 483924

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: [redacted]

Calibration date: 05-May-23

Next calibration due: 4/07/2023

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 10D101443

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.0		393774	pH 7.0
2. pH 4.00		pH 4.0		399527	pH 4.0
3. ORP		231.86mV		401308/395763	232.08mV
4. EC		2760uS		396172	2761uS
5. D.O		100%		Fresh Air	101% - 751.8mmHg
6. Temp		23.7oC		MultiTherm 09000528	23.6oC

Calibrated by: [redacted]

Calibration date: 05-May-23

Next calibration due: 4/06/2023

Solinst Model 122 Interface Meter

Instrument Interface Meter (100M)
Serial No. 485360

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	8.49v
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: [redacted]

Calibration date: **18/05/2023 0:00**

Next calibration due: **17/07/2023 0:00**

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 21G102169

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. D.O		100% @764.5mmHg		Fresh Air	100%
2. Conductivity		2760uS		396172	2760uS
3. pH7		pH 7.00		399527	pH 7.00
4. pH4		pH 4.00		399304	pH 4.00
5. ORP mV		237.14 mV		401308/395763	236.48 mV
6. Temp °C		21.3		MultiTherm 09000528	21.6

Calibrated by: [redacted]

Calibration date: **18-May-23**

Next calibration due: **14-Nov-23**

AECOM

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612563
Project Location:	AACO	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Air-met
Make and Model:	YSI Pro Quatro
Serial Number:	10H100314

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	17/04/2023 8:00				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:	4	7	2760	0	231.4
Bump Test Reading:	4.02	7.01	2656	0	232.4
Bump Test Temperature:	18.2	18.1	18.2	18.2	18.1

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]

Fieldwork Staff Signature

17/04/2023

Date

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612563
Project Location:	AACO	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Air-met
Make and Model:	YSI Pro Quatro
Serial Number:	10H100314

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	18/04/2023 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:	4	7	2760	0	231.4
Bump Test Reading:	4.02	7.02	2686	0	232.3
Bump Test Temperature:	17.2	17.1	17.2	17.2	17.2

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]

Fieldwork Staff Signature

18/04/2023

Date

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612563
Project Location:	AACO	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Air-met
Make and Model:	YSI Pro Quatro
Serial Number:	10H100314

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	19/04/2023 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:	4	7	2760	0	231.4
Bump Test Reading:	4.01	7.03	2710	0	232.6
Bump Test Temperature:	16.5	16.4	16.6	16.4	16.5

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] 19/04/2023

Fieldwork Staff Signature **Date**

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612563
Project Location:	AACO	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Air-met
Make and Model:	YSI Pro Quatro
Serial Number:	10H100314

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	20/04/2023 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:	4	7	2760	0	231.4
Bump Test Reading:	4.03	7.01	2705	0	237.3
Bump Test Temperature:	15.2	15.4	15.4	15.3	15.4

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — **Fieldwork Staff Signature**

20/04/2023 — **Date**

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612563
Project Location:	AACO	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Air-met
Make and Model:	YSI Pro Quatro
Serial Number:	10H100314

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	21/04/2023 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:	4	7	2760	0	231.4
Bump Test Reading:	4.02	7.02	2696	0	234.3
Bump Test Temperature:	17.2	17.1	17.3	17.3	17.3

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — **Fieldwork Staff Signature**

21/04/2023 — **Date**

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612563
Project Location:	AACO	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	A[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Air-met
Make and Model:	YSI Pro Quatro
Serial Number:	20M100099

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	26/04/2023 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:	4	7	2760	0	232.7
Bump Test Reading:	4.01	7.03	2712	0.01	235.5
Bump Test Temperature:	17.5	17.2	17.4	17.5	17.5

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted] — **Fieldwork Staff Signature**

26/04/2023 — **Date**

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612563
Project Location:	AACO	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Air-met
Make and Model:	YSI Pro Quatro
Serial Number:	20M100099

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	27/04/2023 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:	4	7	2760	0	232.7
Bump Test Reading:	4.02	7.01	2725	0	234.6
Bump Test Temperature:	16.2	16.4	16.5	16.5	16.4

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]

Fieldwork Staff Signature

27/04/2023

Date

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612563
Project Location:	AACO	**Client:**	DOD
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Air-met
Make and Model:	YSI Pro Quatro
Serial Number:	20M100099

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	28/04/2023 0800				
Parameter	Acidity		Conductivity	Dissolved Oxygen	Redox
Units	pH	pH	µS/cm	ppm	mV
Calibration Standard Concentration:	4	7	2760	0	232.7
Bump Test Reading:	4.02	7.02	2723	0	236.7
Bump Test Temperature:	17.5	17.5	17.5	17.5	17.5

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☐ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]

Fieldwork Staff Signature

28/04/2023

Date

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	BMP - Amberley	**Project Number:**	60612563
Project Location:	Amberley	**Client:**	Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	Aer met
Make and Model:	YSI Pro Quattro
Serial Number:	

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	11/05/23				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	4	7.01	2760	0	238.2
Bump Test Reading:	4.02	6.98	2752	0	236.5
Bump Test Temperature:	22.1	22.2	22.4	22.4	22.4

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

[redacted]
Fieldwork Staff Signature

11/05/23.
Date

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	PFAS OMP	**Project Number:**	60612563
Project Location:	AMBERLEY	**Client:**	Defence
PM Name:	[redacted]	**Fieldwork Staff Name:**	[redacted]

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

INSTRUMENT DETAILS

Supplier:	AIRMET
Make and Model:	YSI Pro Plus
Serial Number:	21G102169

CALIBRATION

CALIBRATE WITH CALIBRATION SOLUTIONS

Date and Time:	~~23/05/23 0845~~				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

ONGOING CHECKS

BUMP TEST WITH CALIBRATION SOLUTION

Date and Time:	23/05/23 0845				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	4	7.	2652	231.6	0
Bump Test Reading:	4.00	6.98	2631	232.4	0.00
Bump Test Temperature:	16.8	16.8	16.8	16.8	16.9.

COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

Approval and Distribution

☑ Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

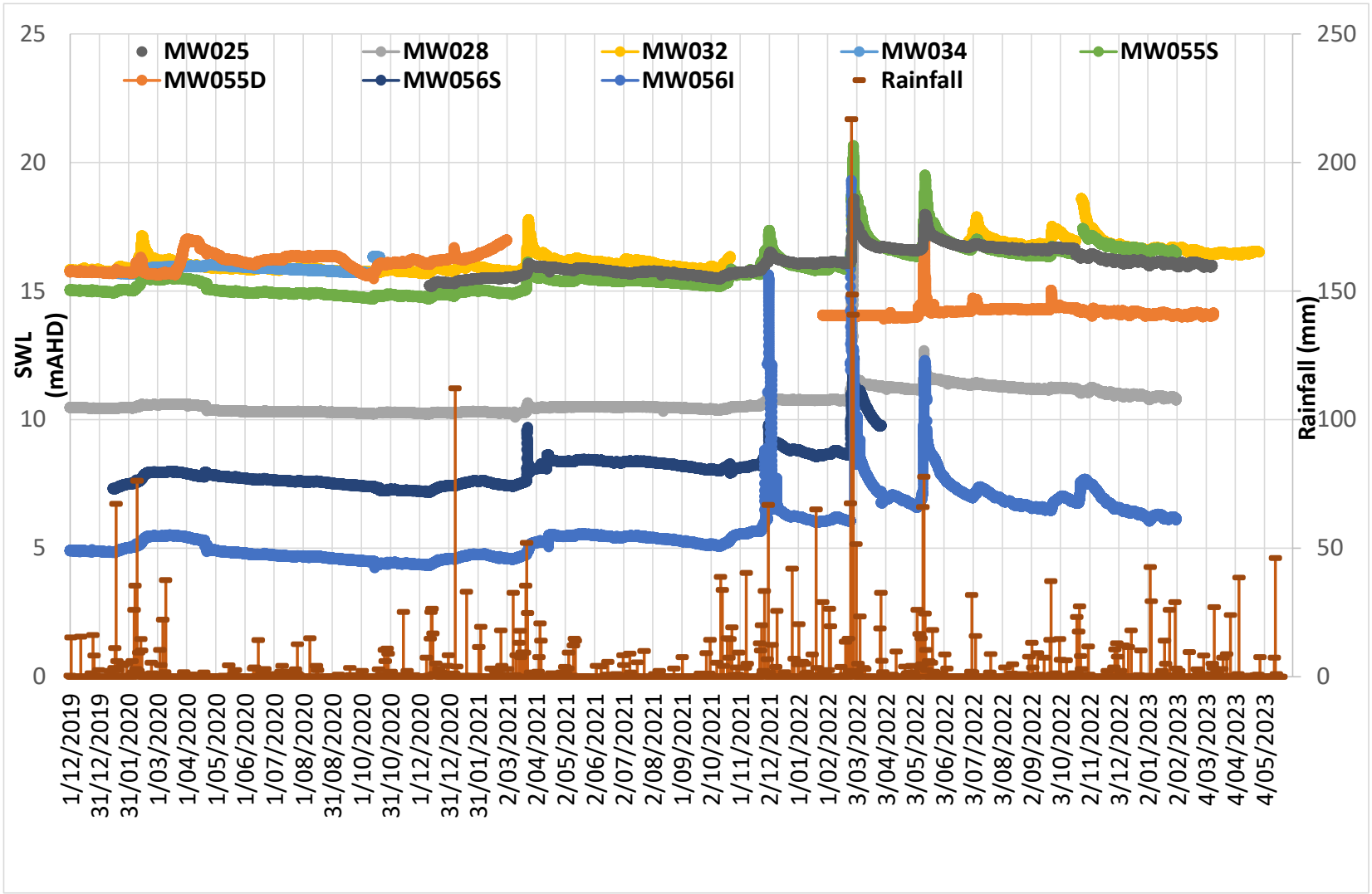
[redacted] — 23/05/23 (Date)

Distribution: Project Central File

Appendix G

Groundwater Level Data

Appendix G Groundwater Level Data


MW025
MW028
MW032
MW034
MW055S
MW055D
MW056S
MW056I
Rainfall
SWL (mAHD)
Rainfall (mm)
25
20
15
10
5
0
250
200
150
100
50
0
1/12/2019
31/12/2019
31/01/2020
1/03/2020
1/04/2020
1/05/2020
1/06/2020
1/07/2020
1/08/2020
31/08/2020
1/10/2020
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3/10/2022
2/11/2022
3/12/2022
2/01/2023
2/02/2023
4/03/2023
4/04/2023
4/05/2023