

Preliminary Site Investigation - PFAS. Executive Summary

Salt Ash Air Weapons Range

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Executive Summary

Background

AECOM Australia Pty Ltd (AECOM) has prepared this Preliminary Site Investigation (PSI) Report as part of the *Lead Consultant For Comprehensive Investigation of PFAS Site Conditions* package of works at the Salt Ash Air Weapons Range (the Site).

Initial groundwater sampling conducted by Aurecon at the Site as part of the routine groundwater monitoring program in February and May 2017 identified Per- and Poly-Fluoroalkyl Substances (PFAS) in a number of groundwater monitoring wells. AECOM completed sampling at the request of the Department of Defence (Defence) at two targeted groundwater locations in June 2017, which confirmed the presence of PFAS at locations MB6 and MB8. Monitoring well (MB8) reported a sum of PFOS and PFHxS (PFOS + PFHxS) concentration of 0.25 µg/L (AECOM, 2017).

Objectives

The objectives of the PSI were to:

- Produce a PSI report that is consistent with scientific and professional standards (including the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (ASC NEPM, 2013) and Heads of Environment Protection Authority (HEPA) PFAS National Environmental Management Plan (NEMP), 2018;
- Confirm if PFAS is migrating off-Site;
- Communicate an understanding of the conceptual site model (CSM) including potential sources of legacy PFAS contamination, potential and complete exposure pathways and receptors to groundwater and surface water; and
- Recommend further actions.

Extent of PFAS Contamination

The extent of PFAS at the Site has been evaluated through review of the historical uses of Aqueous Film Forming Foam (AFFF) and sampling of multiple media including; groundwater, surface water, soil and sediment.

The extent of PFAS in groundwater on the Site (during the 2018 PSI) was limited to one groundwater well (MB8) and reported a PFOS concentration of 0.12 µg/L. The source of this detection remains unidentified, however is likely attributable to historical activities on the Target Area such as waste burial and burning. Monitoring wells installed at or close to the Site boundary all reported PFAS concentrations less than the laboratory Limit of Reporting (LOR), which indicates based on the data collected during the 2018 PSI that PFAS is not currently migrating off-Site in groundwater.

Significantly PFAS was not reported in concentrations above the laboratory LOR in any surface water or soil samples collected as part of the PSI scope of works, providing further indication that PFAS is not currently migrating off-Site.

Three sediment samples collected reported detectable concentrations of PFOS ranging from 0.0002 mg/kg to 0.0008 mg/kg. The sample with the greatest PFOS concentration (SD004) was collected hydraulically up gradient of Racecourse Swamp (where an historical aircraft crash occurred) adjacent to the Target Area, suggesting that the presence of PFAS may be related to groundwater migration from the Target Area.

The results of the PSI indicate that a major source of PFAS (such as a fire training ground) is not present at the Site and that the reported PFAS detections are likely associated with an isolated, small and diminishing source.

Conceptual Site Model

The preliminary CSM (AECOM, 2018a) has been refined based on the analytical results of data collected from multiple media both on- and off-Site. The CSM and discussion presented in this report provide lines of evidence that PFAS originating from potential source(s) within the Target Area are leaching from soils or buried wastes etc. to groundwater when surface water (rain) infiltrates through

the exposed, permeable sands of the Target Area. The rain causes PFAS to migrate into the groundwater where it is expected that the permeable nature, low cation exchange capacity and organic carbon of the aquifer matrix (sand) enables PFAS to migrate at or close to the velocity of the groundwater from the Target Area towards Racecourse Swamp and HWC PS 14. The extent of PFAS migration in groundwater based on results of sampling conducted during the PSI is currently undefined but likely limited to within the Target Area.

All exposure scenarios in the CSM based on the current data were assessed to be incomplete or pose a low and acceptable risk (based on the sampling reported in this PSI).

PS 14 is currently not in operation and therefore the exposure linkage to receptors is currently incomplete. Should PS 14 recommence production, the exposure linkage is potentially complete and could pose a risk to users of the abstracted water.

Recommendations

Based on the outcomes of the 2018 PSI, proceeding to a Detailed Site Investigation is not considered to be required; however the following recommendations have been made:

- Sampling for PFAS at the Site on an annual basis in select groundwater monitoring wells.
- A detailed monitoring plan be developed to monitor changes in PFAS extent and hydrogeology should PS 14 resume operation.