



Background to the Investigation

In May 2017 Defence engaged Jacobs, an independent environmental consultant, to conduct an environmental investigation into per- and poly-fluoroalkyl substances (PFAS) at RAAF Base Wagga. A Preliminary Site Investigation (PSI) is now complete and a Detailed Site Investigation (DSI) is planned to start in September 2017.

The investigation is part of Defence's review of a number of its sites around Australia that used legacy fire-fighting foams containing PFAS.

Defence has a history of using legacy Aqueous Film Forming Foam (AFFF) for emergency fire fighting situations and for fire fighter training. In 2004 Defence commenced phasing out its use of legacy AFFF containing perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) as active ingredients. Perfluorohexane Sulfonate (PFHxS) was also commonly found in the legacy AFFFs as an impurity in the manufacturing process. The AFFF now used by Defence is a more environmentally safe product.

About per- and poly-fluoroalkyl substances (PFAS)

PFOS, PFOA and PFHxS belong to a group of chemicals known as PFAS. AFFF containing PFOS and PFOA as active ingredients were once used extensively worldwide and within Australia because of their effectiveness in fighting liquid fuel fires.

PFAS were also used across Australia and internationally in a range of common household products and specialty applications, including in the manufacture of non-stick cookware; fabric, furniture and carpet stain protection applications; food packaging and in some industrial processes. As a result, most people living in the developed world will have levels of PFAS in their body.

PFAS are emerging as a concern around the world because they are persistent in the environment.

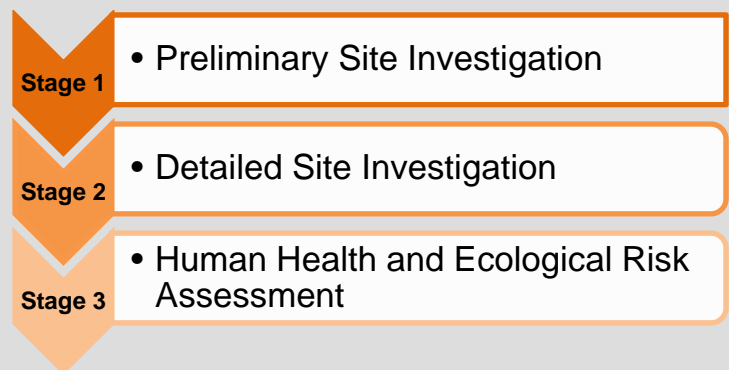


Common sources of PFAS

Objective of the Investigation

The objective of the environmental investigation is to identify the nature and extent of PFAS in the environment from legacy AFFF use at the Base and any potential risks to people or the environment. The understanding of these potential risks will assist in developing mitigation strategies to minimise exposure.

The environmental investigation is being undertaken in accordance with the National Environmental Protection (Assessment of Site Contamination) Measure 1999 (NEPM). There are three main stages to the investigation:



Investigation Stages





Environmental Investigation Activities

The detailed environmental investigation is expected to take approximately 12 months and will include:

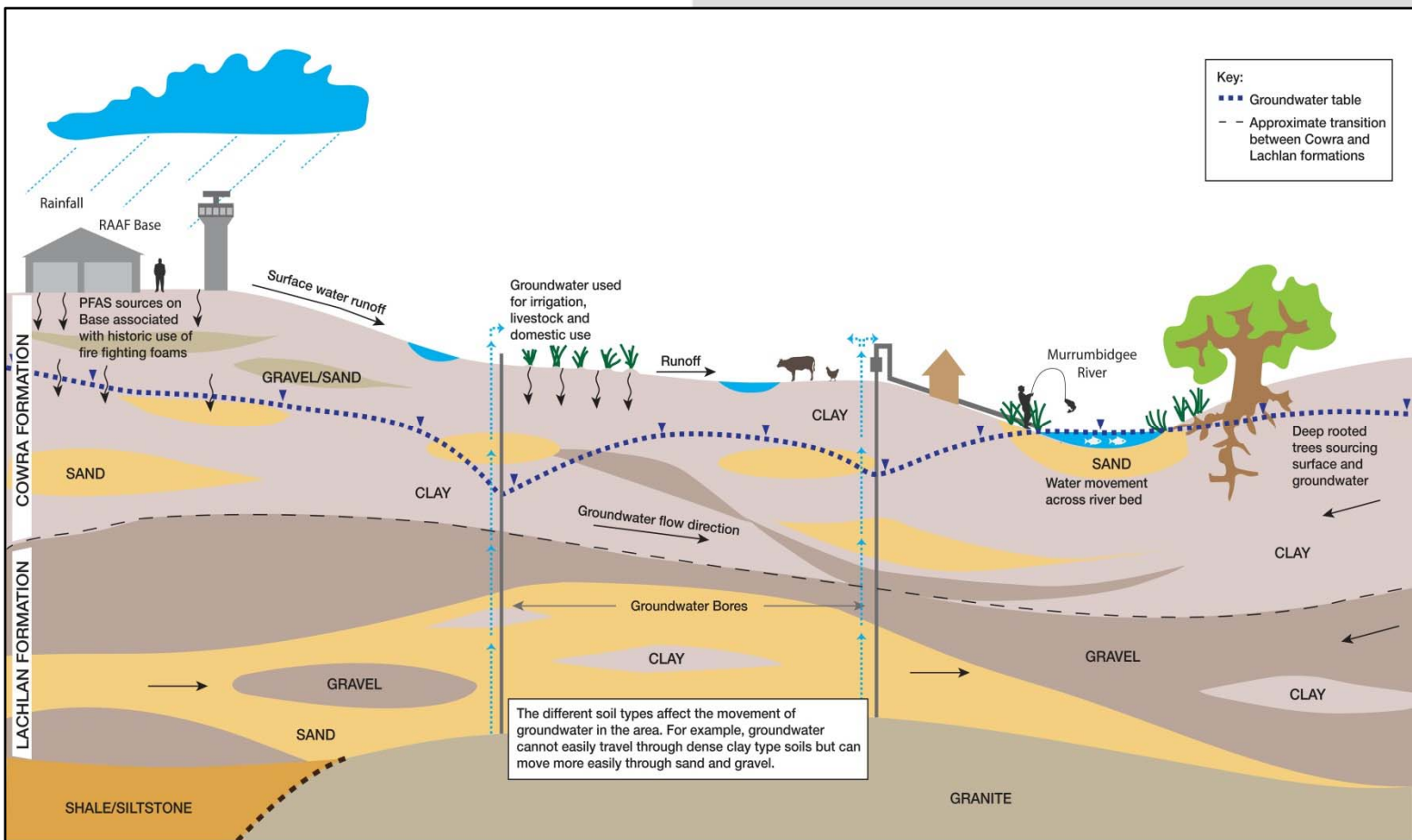
- reviewing the historical use, storage and management of AFFF to identify potential sources of PFAS;
- identifying pathways and receptors for the potential migration of PFAS;
- sampling soil, sediment, surface water, groundwater, and possibly plants and animals on and off the Base to identify PFAS exposure in the vicinity;
- community and stakeholder engagement, including a water-use survey; and
- a Human Health and Ecological Risk Assessment (if assessed as required), which will evaluate potential risks to the human population and ecology, and inform actions to mitigate risks.

Stage 1: Preliminary Site Investigation (PSI)

The first stage of the investigation, the Preliminary Site Investigation (PSI), has now been completed. This stage involved the historical review of legacy fire-fighting foam use at the Base to determine PFAS contamination **sources**, migration **pathways** and potential **receptors**.

Sources: where and when legacy AFFF was used
Pathways: how PFAS moves in the environment
Receptors: people, animals and the environment that may be exposed to PFAS

The findings of the PSI have been used to develop a conceptual site model (see below). The conceptual site model will be used to guide understanding of sources of PFAS and their potential pathways to human receptors (people) and to develop a sampling plan for the DSI.



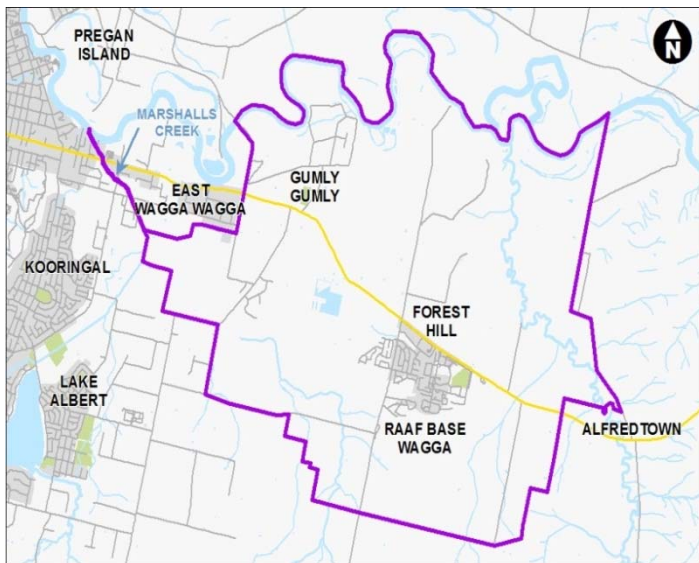
RAAF Base Wagga: Preliminary Conceptual Site Model





Preliminary Study Area

The Preliminary Study Area defines the current extent of the investigation. The study area is focused on potential human and ecology receptors. Subject to the results and findings of the DSI this area may be contracted or expanded as required.



Preliminary Study Area RAAF Base Wagga

Stage 2: Detailed Site Investigation (DSI)

The DSI is planned to start in September 2017 and will involve sampling soil, sediment, surface water and groundwater on-base, and at various locations surrounding the Base within the Investigation Area shown above.

Sampling will involve testing existing and newly installed groundwater bores, surface water, sediment and soil in the area around RAAF Base Wagga.

Water Use Survey

As part of the DSI we are carrying out a water use survey to find out more about water use near RAAF Base Wagga. The voluntary survey aims to collect information about how bore and surface water is used and will determine what additional sampling needs to be conducted as part of the detailed environmental investigation.

Sampling and testing



Small rig used to drill boreholes

Sampling activities outside of the Base will be limited to business hours (8am to 6pm) and community members surrounding the work will be consulted in advance.

A drill-rig will be used to install groundwater monitoring wells and take soil samples. The drill-rig will produce some short-term noise and vibration, this will not be damaging to hearing or buildings.

Groundwater samples will be collected from these monitoring wells for analysis to determine if PFAS is present.

Human Health and Ecological Risk Assessment

A more detailed assessment to better understand the risk to people and the environment may be undertaken if required.

- The risk assessment will be triggered if results during the Detailed Site Investigation exceed applicable guideline values.
- The risk assessment is a detailed, scientific process that may involve further sampling.
- The results of the risk assessment assist with planning for managing risks and/or remediation.





Investigation outcomes

When detailed environmental investigation reports are finalised and publicly released, we will consult with residents, businesses and local stakeholders on the findings.

Defence provides the environmental investigation reports to relevant government stakeholders. This ensures they have current information to inform their management decisions.

Defence takes detailed environmental investigations very seriously and is committed to implementing appropriate management responses based on the advice of independent scientific experts in this field.

Government Guidance

The Environmental Health Standing Committee (enHealth) of the Australian Health Protection Principal Committee (AHPPC) has released guidance statements relating to human health.

According to enHealth, there is currently no consistent evidence that exposure to PFOS and PFOA causes adverse human health effects.

However, because these substances persist in humans and the environment, enHealth recommends that human exposure is minimised as a precaution.

The Commonwealth Department of Health released final Health Based Guidance Values (HBGVs) for PFAS on 3 April 2017.

These HBGVs were developed by FSANZ at the request of the Department of Health and replace the interim enHealth guidelines released in June 2016.

Defence will adopt the final HBGVs in all its environmental investigations including at RAAF Base Wagga.

Supply of alternative drinking water

As a precaution, Defence is providing bottled water to residents who fulfil certain criteria, within the investigation area surrounding the base.

For further information call 1800 931 700.

Keeping the community informed

Defence is committed to regularly updating the community throughout the investigation. As well as community information sessions, updates are provided through the project website, direct mail and information sheets as new information becomes available.

Useful Links

The Australian Government Department of Health has established a PFAS webpage:

<http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-pfas.htm>

Department of Health PFAS hotline: 1800 941 180

Health Based Guidance Values:

<http://www.health.gov.au/internet/main/publishing.nsf/content/ohp-pfas-hbgv.htm>

Contact the Project Team

Phone: 1800 365 414

Web: www.defence.gov.au/Environment/PFAS/Wagga/

Email: wagga.defence@jacobs.com

Media enquiries should be directed to Defence Media Operations on (02) 6127 1999 or media@defence.gov.au

