

About the Investigation

In September 2019, Fire and Rescue NSW (FRNSW) commenced a detailed site investigation (DSI) into the nature and extent of per- and poly-fluoroalkyl substances (PFAS) at Our Lady of Lourdes (OLOL) Primary School, Tarro, as a result of the historical use of legacy firefighting foams for training.

The term PFAS relates to a large number of chemical substances, with the primary PFAS compounds of interest to the investigation being perfluorooctane sulfonate (PFOS), perfluorohexane sulfonate (PFHxS), and perfluorooctanoic acid (PFOA).



Figure 1: Investigation Area.

The objectives of the environmental investigation are to identify if PFAS is present at the school and in offsite locations and identify potential risks to people or the environment. Understanding potential risks will assist in developing ways to minimise exposure to PFAS if and where necessary.

Investigation update

The first stage of the investigation, the Preliminary Site Investigation, was completed and presented to the school community in October 2019.

The second stage of the investigation, the DSI, has now also been completed. The DSI involved the collection and analysis of samples to better understand where PFAS is within the Investigation Area (Figure 1) and how PFAS moves through the environment.

The full DSI report is available to view at
<https://www.fire.nsw.gov.au/page.php?id=9322>

DSI sampling

The DSI involved sampling and analysis of soil, surface water (stormwater), tank water, produce, and groundwater.

Samples were taken from 45 locations across the Investigation Area. Additional samples were also taken from the produce gardens and the rain water tank.

Summary of the DSI Findings

PFAS were detected in soil, surface water (stormwater), and groundwater samples. Concentrations at some locations exceeded human health and ecological guidelines. Results above these guidelines do not necessarily mean there is a risk for people or the environment but indicate that further investigation is required.

Consequently, a site-specific risk assessment was undertaken. The results indicate that risks to people from exposure to PFAS, via incidental ingestion of soils (including dust), are low and acceptable. This means that ingestion of PFAS from soils are likely to be less than the Tolerable Daily Intake recommended by Food Standards Australia New Zealand for exposures to both surface and near surface soils at the site. A tolerable daily intake provides a conservative safety threshold and is the amount of a substance which a person, based on the best available evidence, can be exposed to per day over a lifetime, without appreciable health risk.



PFAS FACT SHEET TARRO INVESTIGATION Detailed Site Investigation Findings

While, further assessment into surface water (stormwater) and groundwater have not been undertaken at this stage, PFAS in surface water (stormwater) and groundwater is not considered to pose a direct risk of exposure to the school community because:

- Surface water (stormwater) is not used for drinking at OLOL Primary School or local area, and access to the stormwater drainage system is limited; and
- Groundwater (bore water) is not consumed or used at OLOL Primary School.

Rainwater tank samples, limes, cherry tomatoes, blueberries, kaffir limes, and garlic bulbs collected from OLOL Primary School were below the laboratory limit of reporting for reporting for PFOS, PFHxS and PFOA. This either means that there is no PFOS, PFHxS, and PFOA in the sample or that the amount was too small for the laboratory to measure. Laboratory limits of reporting are below the PFAS guidelines.

The DSI also identified potential pathways by which PFAS might move through the environment including:

- From soil in the investigation area to groundwater or surface water (stormwater); and
- From surface water (stormwater) runoff into drains.

Recommendations

The DSI has indicated that a number of exposure pathways are incomplete. This means that contamination is not connected to people or the environment and therefore does not pose a risk. This applies to the exposure risks to children, staff, and other people using OLOL Primary School from surface and near surface soils, surface water, tank water, produce, and groundwater.

Therefore, based on the findings of the DSI, it is recommended that normal management practices for a primary school be implemented including:

- Ensuring children are not playing underneath buildings; and
- Encouraging hand washing prior to eating food.

In relation to the current construction works, normal management practices are also recommended, including:

- continuing to implement appropriate dust management practices; and
- Levelling and turfing areas disturbed by construction before temporary fencing is removed.

Next steps

While the DSI has not identified any current hazards, a human health and ecological risk assessment (HHERA) will be undertaken to address data gaps that will inform proposed future vegetable gardens, a school kitchen, and raising chickens on site.

In addition, PFAS is likely to be migrating offsite via surface water (stormwater) (the primary migration pathway) and groundwater and further investigation is required.

Concurrent with this further investigation, and on the recommendation of the NSW EPA, FRNSW will be investigating options to reduce PFAS concentrations in soils at OLOL Primary School as a precautionary measure to minimise the potential for offsite migration. Options for management of PFAS in soils is currently limited and can generally include the following:

- Excavation of soils with elevated concentrations of PFAS
- Onsite containment or offsite disposal of excavated material
- Construction of engineered containment cell(s) and/or placement of clean fill within excavated areas (sometimes a liner or geofabric material can be placed between the excavation and the clean fill)
- Surface reinstatement (including hardstand, grass, etc)

Specifically, for OLOL Primary School, the management options are still being assessed and could include some or a combination of the above. Any necessary activities to reduce the potential for offsite migration of PFAS from soils at the site are intended to be undertaken during school holidays (as far as practicable) to minimise disruption to school operations.



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PFAS Further Information

Further information about the FRNSW PFAS Investigation is available at www.fire.nsw.gov.au/pfas

Information on the PFAS Investigation Program being undertaken by the NSW EPA is available at www.epa.nsw.gov.au/Mediainformation/pfasinvestigation.htm

Information on PFAS health effects and exposure pathways can be found on the Department of Health's website at <https://www1.health.gov.au/internet/main/publishing.nsf/Content/ohp-pfas.htm>

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