

Williamtown PFAS investigations: air monitoring

Information for local residents

The risk of exposure to per- and poly- fluoroalkyl substances (PFAS) via dust is low. Studies conducted by the NSW Government, in consultation with independent air monitoring experts, have found that the potential health risks posed by exposure to PFAS through air, are not significant. These studies concluded that air monitoring will not add to information about exposure risk from these pathways, and that managing risk through food and water should be the focus of efforts to reduce exposure. Risk calculations using the recently revised Food Standards Australia New Zealand (FSANZ) guidelines for the tolerable daily intake for PFAS support this assessment.

Is PFAS via dust a significant exposure pathway?

While the firefighting foams used at the Williamtown RAAF base did not contain the types of PFAS that are volatile (form a gas in the air), PFAS can attach to dust particles.

Exposure can occur through:

- Inhaling fine dust particles.
- Ingesting dust from hands, furniture, countertops, floors.

However, the health risk from exposure to PFAS via dust is low.

How has the safety of PFAS via dust been determined?

The Human Health Risk Assessment (HHRA) looked at many different exposure scenarios and calculated the health risk to both adults and children.

Additionally, the NSW EPA met with air quality and toxicology experts.

The risk profile for PFAS in dust has subsequently been reviewed following the release of the FSANZ endorsed levels for the tolerable daily intake for PFOS, PFOA and PFHxS, which are lower than those used in the HHRA.

Throughout these assessments, the use of contaminated water (surface water and groundwater) and consumption of home

grown food such as beef and eggs were identified as high risk exposure pathways.

Exposure pathways such as inhalation of dust in air and incidental ingestion of soil and dust were also assessed and were identified as low risk exposure pathways.

What factors were used in the risk calculations?

Separate calculations were used to review the risks associated with inhalation and ingestion. These calculations were repeated using the FSANZ endorsed values.

Real data from the Newcastle air quality monitoring network was used to determine the amount of dust in the air, however in order to allow a margin of safety, the following 'worst-case scenario' factors were accommodated:

- Levels of dust in the air were assumed to be high, rather than the levels that typically occur.
- All household dust was assumed to be from contaminated soil.
- Levels of PFAS in soil were assumed to be high across the whole area, rather than the lower levels that typically occur.

What were the findings?

The calculations for both inhalation and ingestion showed that exposure to PFAS via dust is low.

Ingestion

The calculations, using the FSANZ endorsed values, found that exposure to PFAS in dust by ingestion accounts for:

- 0.3% of the Tolerable Daily Intake (TDI) in the Williamstown Investigation Area (minus the Southern area).
- 3% of the TDI in the Southern part of the Williamstown Investigation Area.

These calculations show exposure via ingestion of PFAS in dust accounts for a very small percentage of the TDI, indicating very low risk.

A separate calculation was undertaken using the highest PFAS soil concentrations detected at the RAAF base.

This found that exposure by ingestion of soil for adults living long-term on the Base could account for up to 18% of the TDI. To assess the risk to workers involved in construction work on the base, separate site-specific calculations would be required and this is a matter for the Department of Defence.

Inhalation

Calculations for inhalation as an exposure pathway resulted in even lower risk than ingestion.

The calculations found that exposure by inhalation accounts for:

- 0.001% of the TDI in the Williamstown Investigation Area.
- 0.01% of the TDI in the southern part of the Williamstown Investigation Area.

What conclusions can be drawn from these results?

The calculations confirmed that:

- The risk of exposure to PFAS via dust is low.
- The risk from other pathways such as food and water is more important and

should remain the focus of efforts to reduce potential exposure.

- Air monitoring will not add to what we know about the risk of exposure to PFAS via dust.

Additionally, the ability to undertake air monitoring is limited with no commercial laboratories in Australia or overseas with NATA accredited methods (or equivalent) for quantifying PFAS in air.

What is a TDI?

A TDI or tolerable daily intake 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.

Exceeding the TDI does not necessarily mean health effects will occur, because in calculating the TDI value, a number of large safety factors have already been put in to add extra protection to people.

Given that PFAS take a long time to break down in humans and the environment, it is important to reduce exposure wherever practicable, even if the TDI is not exceeded.

The NSW Government's precautionary guidelines aim to minimise the community's exposure to these substances.

Where can I find more information?

More information on PFAS is available at www.epa.nsw.gov.au/MediaInformation/williamtown.htm.

If you have any questions or concerns, call the NSW Environment Line on **131 555**.