Q. WHAT IS PFAS?

Perfluorooctane sulfonic acid (PFOS), perfluorooctanoic acid (PFOA) and Perfluorohexane sulfonate (PFHxS) are part of a family of manufactured compounds called per- and poly-fluoroalkyl substances (PFAS), which are used in a wide variety of applications. They are emerging contaminants that bioaccumulate in the environment, and are commonly found in and around populated areas throughout Australia and internationally.

Q. WHAT IS PFAS USED FOR?

PFASs are widely used to make everyday products more stain-resistant, waterproof and/or nonstick. For example, PFASs have been used in the manufacture of products that:

- keep food from sticking to cookware,
- make upholstered furniture, carpets and clothing resistant to soil, stains and water,
- make shoes, clothes and mattresses more waterproof,
- keep food packaging from sticking to food, and
- help fight fires at airfields and other places where petroleum-product-based fires are a risk.

Because PFASs help reduce friction, they are also used by a variety of other industries such as aerospace, automotive, construction, and electronics factories or businesses.

PFOS was also a component of the Scotchgard™ range of products and an ingredient of some industrial additives, as well as Aqueous Film Forming fire-fighting Foams (AFFF™) and Alcohol-Type Concentrate (ATC™) fire-fighting foams for extinguishing flammable fuel fires.

Consumer products made with fluoropolymers and fluorinated telomers, including Teflon® and other trademark products may contain trace amounts of PFOA and other related PFASs as impurities.

Q. HOW WIDESPREAD ARE PFAS IN THE ENVIRONMENT?

PFOA, PFOS and other PFASs are widespread around the globe, primarily due to their manufacturing, processing and use. They are widespread in part because they are persistent in the environment – that is, they resist breaking down when exposed to air, water or sunlight. As a result, people may become exposed to PFASs manufactured months or years in the past.

Due to their persistence, PFASs can travel long distances through the air. Monitoring in the Arctic has shown levels of PFASs in air, water and living things. As a result, people may become exposed to low levels of PFASs manufactured or emitted from production facilities thousands of kilometers away.
Because these chemicals have been used in an array of consumer products, most people have been exposed to
them. Studies have found PFOS and PFOA in human blood, urine, breast milk and babies’ umbilical cord blood.

The below table shows the occurrence of PFOS and PFOA in the Australian environment including drinking water,
surface water, wastewater influent and treated effluent, sediments and house dust from a research study undertaken
in 2011.

<table>
<thead>
<tr>
<th>MATRIX</th>
<th>TYPE</th>
<th>LOCATION</th>
<th>[PFOS]</th>
<th>[PFOA]</th>
<th>UNITS</th>
<th>REFERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>Drinking</td>
<td>ACT</td>
<td>nd - 1.84</td>
<td>&lt;0.50 - 0.88</td>
<td>ng/L</td>
<td>1</td>
</tr>
<tr>
<td>Water</td>
<td>Drinking</td>
<td>NSW</td>
<td>&lt;0.66 - 4.68</td>
<td>&lt;0.50 - 9.66</td>
<td>ng/L</td>
<td>1</td>
</tr>
<tr>
<td>Water</td>
<td>Drinking</td>
<td>NT</td>
<td>nd</td>
<td>nd - 1.57</td>
<td>ng/L</td>
<td>1</td>
</tr>
<tr>
<td>Water</td>
<td>Drinking</td>
<td>QLD</td>
<td>nd - 0.88</td>
<td>&lt;0.50</td>
<td>ng/L</td>
<td>1</td>
</tr>
<tr>
<td>Water</td>
<td>Drinking</td>
<td>SA</td>
<td>15.1 - 15.6</td>
<td>nd</td>
<td>ng/L</td>
<td>1</td>
</tr>
<tr>
<td>Water</td>
<td>Drinking</td>
<td>TAS</td>
<td>nd - 1.76</td>
<td>&lt;0.50 - 0.73</td>
<td>ng/L</td>
<td>1</td>
</tr>
<tr>
<td>Water</td>
<td>Drinking</td>
<td>VIC</td>
<td>1.18 - 1.21</td>
<td>0.64 - 0.65</td>
<td>ng/L</td>
<td>1</td>
</tr>
<tr>
<td>Water</td>
<td>Drinking</td>
<td>WA</td>
<td>&lt;0.66 - 8.07</td>
<td>&lt;0.50 - 2.1</td>
<td>ng/L</td>
<td>1</td>
</tr>
<tr>
<td>Water</td>
<td>Surface</td>
<td>Homebush Bay</td>
<td>7.5 - 21</td>
<td>4.4 - 6.4</td>
<td>ng/L</td>
<td>2</td>
</tr>
<tr>
<td>Wastewater</td>
<td>Influent</td>
<td></td>
<td>up to 3.7</td>
<td>up to 16</td>
<td>ng/L</td>
<td>3</td>
</tr>
<tr>
<td>Wastewater</td>
<td>Effluent</td>
<td></td>
<td>0.7</td>
<td>12</td>
<td>ng/L</td>
<td>3</td>
</tr>
<tr>
<td>Sediment</td>
<td>Sediment</td>
<td>Homebush Bay</td>
<td>1.5 (mean)</td>
<td>µg/Kg</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>House Dust</td>
<td>House Dust</td>
<td>Bris, Newc, Syd</td>
<td>6.5 - 8100</td>
<td>15 - 2900</td>
<td>µg/Kg</td>
<td>4</td>
</tr>
</tbody>
</table>


Q. WHAT CONCENTRATIONS OF PFAS CAN HUNTER WATER DETECT?
Hunter Water’s samples are tested by an independent laboratory, which uses a NATA-accredited testing method with a Level of Reporting (LOR) of 0.002 micrograms per-litre of PFOS/PFOA in water.

Q. WHERE DOES HUNTER WATER TEST FOR PFAS?
Currently Hunter Water undertakes routine sampling and testing for PFOS and PFOA in:

- source water supplies to all Water Treatment Plants (WTPs);
- drinking water supplied to customers in all water supply zones;
- wastewater discharged to Hunter Water’s sewerage system by major and moderate trade waste customers;
- raw wastewater, treated effluent and biosolids samples at select Wastewater Treatment Works (WWTWs);

All samples are tested by an independent laboratory.
Q. ARE HUNTER WATER’S CATCHMENTS AT RISK FROM PFAS CONTAMINATION SPREADING FROM THE RAAF BASE WILLIAMTOWN?

Although Grahamstown Dam and its catchment is only a few kilometres away from the RAAF Base Williamtown, the surface and groundwater flow direction between RAAF Williamtown and the Grahamstown Dam catchment makes it impossible for water to move naturally from the Base to Grahamstown Dam. This assessment is based on decades of hydrological testing and modelling.

While it is true that parts of the Tomago Sandbeds have been impacted by the contamination from RAAF Williamtown, Hunter Water can avoid the problem by managing which bores it operates. Hunter Water has embargoed, or isolated, three of its bore stations in the Tomago Sandbeds as a precaution while further investigations are undertaken. It is possible that some or all of these bore stations may be able to supply safe drinking water again in the future if appropriate management strategies can be developed. The Tomago Sandbeds is used as a backup water source, and the water is tested for contaminants including PFOS/PFOA before it enters the drinking water supply.

Q. WHAT IS HUNTER WATER DOING TO ENSURE ITS WATER SUPPLIES ARE SAFE FROM CONTAMINATION?

Hunter Water has an extensive catchment to tap water quality monitoring program in place as part of our Drinking Water Quality Management System. Source waters are sampled and analysed for PFOS/PFOA on a monthly basis, representing the quality of water entering each of our water treatment plants.

With regards to drinking water, Hunter Water routinely monitor 68 locations throughout the entire drinking water distribution system for a variety of physical, chemical and microbiological analytes. Each of these monitoring locations are sampled for PFOS/PFOA on a quarterly basis, however at least one third are sampled every month. In addition, for further assurance, six locations are sampled monthly for PFOS/PFOA in the vicinity of RAAF Base Williamtown.

This ensures that a total of at least 36 samples of PFOS/PFOA are sampled throughout the water source and drinking water distribution systems on a monthly basis.

In the event the Tomago Sandbeds are operated, a monitoring program is initiated which tests sections of the Borefield prior to connection to the system, and assurance testing is periodically carried out during periods of operation.

Q. WHAT GUIDELINES DOES HUNTER WATER APPLY?

The drinking water Hunter Water supplies is regularly tested throughout the water supply system. Hunter Water’s water quality is regulated by NSW Health and is required to comply with the National Health and Medical Research Council’s Australian Drinking Water Guidelines (ADWG) and other relevant guidelines.

In consultation with NSW Health, Hunter Water has adopted the Food Standards Australia New Zealand (FSANZ) guidelines for Perfluorooctane Sulfonate (PFOS), Perfluorooctanoic Acid (PFOA), and Perfluorohexane sulfonate (PFHxS) of: less than 0.07 micrograms per litre for PFOS and PFHxS and less than 0.56 micrograms per litre for PFOA.

Hunter Water routinely samples for PFAS in all of its drinking water supply zones, and reports detections over 0.002 micrograms per litre, which is our independent laboratory's minimum limit of reporting.

All results available to date show drinking water supplied by Hunter Water is safe to drink.

Q. WHERE CAN I FIND HUNTER WATER’S WATER QUALITY TESTING RESULTS?

The results are updated monthly and can be found at www.hunterwater.com.au/waterquality

Hunter Water
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hunterwater.com.au
enquiries@hunterwater.com.au