



RAAF Base Williamtown A History of AFFF

Background:

Defence and other organisations in Australia and around the world have used Aqueous Film Forming Foams (AFFF) since the 1970s to suppress liquid fuel fires. AFFF acts quickly by smothering fuel when a thin film of foam forms on the fuel, stopping contact with oxygen. Immediate life and safety concerns need to be met in cases of emergency as liquid fuel fires are dangerous. AFFF has been and still is, considered to be the most effective way to reduce this danger.

Historically, AFFF contained perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). Defence has switched to an environmentally safer product following product tests of available foams.

PFOS and PFOA are:

- man-made and not naturally found in the environment
- stable chemicals that persist in the environment
- used to make coatings and products that resist heat, oil, stains, grease and water and include things like:
 - textiles and leather products
 - metal plating,
 - photographic industry
 - semi-conductors
 - paper and packaging
 - coating additives, such as non stick frying pans
 - cleaning products
 - pesticides

PFOS and PFOA are found at trace concentrations throughout the population and environment.

From 2003 the following actions occurred:

- 2003 – Defence released a specification for the supply and testing of foam concentrates to control and extinguish hydrocarbon fires.
- 2004 – AFFF use at RAAF Base Williamtown was restricted to critical uses only, not in general training.
- 2004 – Defence commissioned trials of alternative AFFF products.
- 2006 – The report on the trial of alternative AFFF products suggested Defence move to Ansulite.
- 2007 - Defence issued environmental guidelines for the management of the fire fighting AFFF products.
- 2008 - Defence released the Aqueous Film Forming Foam (AFFF) Procurement and Usage Interim Policy. This policy aims to reduce the risk of environmental impacts arising from AFFF use, storage, handling and disposal within Defence. It noted Ansulite as the preferred product.
- 2009 – The first Australian laboratory received independent technical accreditation to be competent to consistently identify PFOS and PFOA in samples.
- 2009 – Defence commissioned CRC Care to conduct on site environmental trials to identify PFOS and PFOA contamination.
- 2011 – Transition to the Ansulite AFFF product at RAAF Base Williamtown was finalised on completion of the scheduled maintenance program.
- 2011 – Defence included PFOS and PFOA in the ongoing base monitoring program.
- 2012 – PFOS and PFOA were detected in routine water monitoring for RAAF Base Williamtown. Defence contacted the NSW Environment Protection Authority and Hunter Water Corporation to discuss results.
- 2013 – Stage 1 (Desktop) Environmental Investigation Report completed. The report identified the requirement to undertake further investigations.
- 2014 – Stage 2 Environmental Investigation commenced.
- 2015 – Defence received the technically verified draft report for the Stage 2 Environmental Investigation, which confirmed off site contaminated water.
- 2015 – Defence provided Hunter Water Corporation with preliminary data. The draft report was subsequently provided to key NSW agency stakeholders.





Defence initiated 2003 report into AFFF environmental impacts

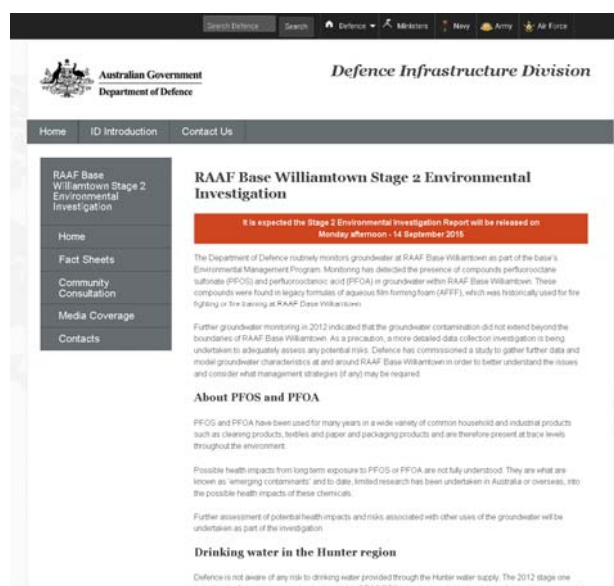
Following worldwide research in the late 1990s and early 2000s, Defence initiated a report in 2003 which provided a general overview of available knowledge regarding environmental issues associated with its use of AFFF. The report identified the following five key recommendations to manage the identified environmental issues.

1. Defence should aim to meet the best practice of AFFF management methods used by other national and international organisations.
2. Defence will need to revise its AFFF practices (use/handling/disposal) and update its infrastructure to appropriately manage AFFF waste-water.
3. Defence should take appropriate measures to ensure that fire fighting foam concentrate/foam solution/waste-water is not disposed of on soil or grass, and does not reach streams, creeks, wetlands, dams, groundwater or storm-water drains.
4. A more comprehensive study may be necessary to identify and assess Defence site-specific environmental risks and personnel health effects relating to AFFF use and management.
5. If environmental and health risks are to be minimised, the AFFF replacement product should not contain PFOS/PFOA. Until a suitable product has been identified some interim measures may need to be undertaken to minimise the release of AFFF that contains PFOS/PFOA to the environment. Where no adequate containment of AFFF is available, AFFF use should be restricted

Defence Response to the Recommendations:

Defence changed our practice and use in response to the key recommendations of the 2003 Report, as well as other emerging guidance, from 2003. Defence has proactively managed the risks associated with the **critical requirement** to still use AFFF products in response to Aviation Emergency situations.

Defence initiated the 2003 Report to understand if there were Environmental issues associated with using AFFF. Upon receiving this report, Defence enacted a structured and deliberate approach to minimise and mitigate these risks. The key elements of this approach are set out in the timeline.



<http://www.defence.gov.au/id/Williamtown/Default.asp>

