

# **Comments regarding the PFAS (Per-and poly-fluoroalkyl substances) National Environmental Management Plan**

## **Friends of the Earth Australia**

**Anthony Amis  
ajamis50@gmail.com**

Friends of the Earth's (FOE) main concerns with the PFAS National Environmental Plan (NEMP) are:

- The ongoing and current use of PFAS are not properly addressed or explained,
- There is an apparent avoidance of public participation and proper community engagement into resolving issues at hand (eg contamination of water supplies),
- There is a poor discussion and weak emphasis on environmental monitoring and analysis,
- The number of PFAS included in the NEMP, are limited and do not include the multitude of uses for these chemicals. A more detailed explanation of the uses of all of these chemicals warrants further explanation,
- Products and mixtures of all PFAS chemicals must be included,
- The Guiding Principles of the NEMP are too limited,
- The NEMP should facilitate further discussion on issues concerning PFAS contamination of irrigation water and bio-solids,
- The NEMP should include more information about potential contamination of food from PFAS and how these chemicals enter the food-chain and reach consumers,
- FoE argues that if monitoring is not occurring for all PFAS chemicals that are in use in Australia, then these chemicals should not be allowed to be used,
- There is no mention of the costs involved in PFAS site clean-ups and who pays,
- There is no little discussion on demarcation issues and who is responsible for clean up eg: <https://pfasproject.com/2017/06/04/australian-federal-government-denies-responsibility-for-pfas-at-tamworth-regional-airport/>

## Additional Points

**1):** There urgently needs to be an investigation into **serious** regulatory failure and how to properly address these systemic failures in the regulatory system. Federal and State Governments have essentially hidden the extent of the problem for decades, but are only acting now. For instance, authorities would have known about the toxicity to firefighting foam for example, since 2000, when 3M withdrew from perfluorooctane sulfonate chemistry.

How many more PFAS “disasters” such a Fiskville, Oakey and Williamtown are there and how are Australian’s being properly informed by State and Federal Government about the risks associated with PFAS? It would appear that the media has taken this lead role and not various Government agencies. Had the media not raised the alarm regarding Fiskville for example in December 2011, issues concerning PFAS contamination in fire fighting foams may well be still be ignored by Government and regulators.

*“Authorities in the US warned Australia 17 years ago that a toxic chemical it was using at defence bases, fire stations, and airports, risked “severe, long-term consequences” to human health and the environment. An email from the US environmental protection agency, obtained by Guardian Australia, shows senior Australian officials were urged to eliminate the use of the chemical, perfluorooctane sulfonate (PFOS), years before they first took action. “It appears to combine persistence, bioaccumulation, and toxicity properties to an extraordinary degree,” the US EPA wrote on 16 May 2000.”*

<https://www.theguardian.com/australia-news/toxic-firefighting-chemicals>

**2):** As a matter of urgency there needs to be a publicly accessible website highlighting PFAS “hotspots” around the country, with details about levels of PFAS recorded at sites and risks to humans and the environment. This would include defence base pollution, current investigations and communities most at risk. It would appear that there is more interest tracking these issues internationally than by Australian authorities:

<https://docs.google.com/spreadsheets/d/10XLF3jfsrUGkPRxKL6D5uS1W8nZzJPOBZ3yN1PaBWBm/edit#gid=1875666542>

<https://pfasproject.com/>.

**3):** FoE would also like more discussion regarding the changes of PFAS safety guideline levels. Why were initial guidelines set at levels much higher than those set in April 2017? How were the initial guidelines determined and why were these guidelines assumed to be correct?

*“Addendum, 4 April 2017: The Australian Government released on 3 April 2017 a review by Food Standards Australia New Zealand (FSANZ), Perfluorinated Chemicals in Food, which determined the recommended tolerable daily intake (TDI) values for people potentially exposed to PFAS, including PFOS and PFOA. As a result, the TDIs have been lowered to 20 nanograms per kilogram of body weight per day for PFOS, and 160 nanograms per kilogram of body weight per day for PFOA. The drinking water quality value for PFOS has been reduced from 0.5 to 0.07 micrograms per litre, and from 5 to 0.56 micrograms per litre for PFOA...”* <http://www.crccare.com/knowledge-sharing/pfos-and-pfoa-guidelines>

The decrease in guideline levels appear to be policy “*on the hop*”, again only reacting to concerns expressed by the local community and media reports. But Federal Government representatives still appear to be refusing to properly deal with the issue.

*“During a visit to Darwin in April, assistant defence minister Michael McCormack dismissed suggestions PFOS and PFOA could be harmful to human health. “I can assure people that there is no link, no link whatsoever, between PFOS and PFOA and adverse human health effects,” he said. Dr Lloyd-Smith said she was “dumfounded” by Mr McCormack’s response. “It flies in the face of all the scientific and health evidence,” she said. “The only thing I could suggest is that they are trying to downplay the seriousness because they want to downplay their liability.”* <http://www.abc.net.au/news/2016-05-05/nt-epa-releases-concerning-creek-contamination-results/7385648>

*“Shine Lawyers principal Peter Shannon, leading a class action lawsuit against the Department of Defence, said the new levels were a “validation of our concerns about the contamination”. It’s gut-wrenching news for the people of Oakey who were told these concerns about the levels were alarmist and unfounded,” he said.”* <https://www.thechronicle.com.au/news/oakeys-chemical-fears-validated-as-new-levels-rele/3162495/>

*“It’s estimated 4000 Oakey residents have been impacted by perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) but the federal government claims there’s no consistent evidence the chemicals harm humans.”* <http://www.9news.com.au/national/2017/07/11/09/38/class-action-over-oakey-contamination>

**4):** Friends of the Earth is aware of PFOS 0.04µg/L and PFAS 0.01µg/L being detected in Bolivar Wastewater Treatment Plant Adelaide in March 2017, yet the Advertiser newspaper reported in August 17 2017 *“The project will pump recycled water from the Bolivar sewage treatment works to the Adelaide Plains for use in irrigated agriculture and horticulture.”*

How many other regions in Australia are these where PFOS /PFOA contaminated water has been or is being planned to be used on farms to grow food? What monitoring is being done to better understand the sources of PFOS/PFOA entering the nation’s wastewater treatment plants?

**5):** FoE would also recommend that a PFAS fact sheet is produced which outlines the main risks associated with PFAS chemicals and by which routes community members are likely to be exposed to these chemicals. This list would include everyday consumer products associated with chronic exposures including food packaging.

Aug 31 2017: *“PFASs were discovered in a set of 20 food packages analyzed in the study while six out of them contained PFOA. While PFASs have been linked to certain kinds of cancers, thyroid disease, decreased fertility, hypertension in pregnancy, low birth weight, and damaged immune systems, PFOA has been linked to an array of other harmful diseases. While the use of PFOA has been banned by many fast food brands, PFASs continue to be used for the purpose of making food packages water and grease proof.”* <http://www.ibtimes.com/fast-food-packaging-harmful-chuck-schumer-wants-fda-investigate-2572418>

*“The prevalence of fluorinated chemicals in fast food packaging demonstrates their potentially significant contribution to dietary PFAS exposure and environmental contamination during production and disposal.”*

<http://pubs.acs.org/doi/abs/10.1021/acs.estlett.6b00435>

*“It turned out food wrappers were a major source of exposure. Under oath, a former DuPont chemist described how customers ingested the chemicals every time they ate a french fry.”* <http://www.chicagotribune.com/lifestyles/health/ct-fast-food-chemicals-in-packaging-20170201-story.html>

*“In the general population, the dominating sources of exposure are through diet and consumer products (Vestergren and Cousins, 2009; Vestergren et al, 2012). However, during the past decade it has become apparent that localised PFAS contamination to surface and groundwater occurs around military and civilian firefighting training facilities where large quantities of AFFF foams have been used. These substances are further disseminated by means of groundwater flows, and may also reach drinking water wells.”* TECHNICAL REPORT Half-lives of PFOS, PFHxS and PFOA after end of exposure to contaminated drinking water Ying Li<sup>1</sup> Daniel Mucs<sup>2</sup> Kristin Scott<sup>3</sup> Christian Lindh<sup>3,4</sup> Pia Tallving<sup>3</sup> Tony Fletcher<sup>5</sup> Kristina Jakobsson<sup>1,3</sup> <sup>1</sup>Occupational and Environmental Medicine, Gothenburg University <sup>2</sup>Swetox, Karolinska Institute, Unit for Toxicological Sciences-Södertälje <sup>3</sup>Occupational and Environmental Medicine, Lund University <sup>4</sup>Occupational and Environmental Medicine, Scania Region <sup>5</sup>London School of Hygiene and Tropical Medicine

*“How PFOS is thought to arrive in the general population is reviewed from Environmental Working Group (2015) findings, confirming treating with stain repellents (eg. carpets and food packaging) could be significant sources, and may explain why children’s levels are higher.”* C6 SHORT-CHAIN FLUOROTELOMERS PROVIDE A BETTER ENVIRONMENTAL SOLUTION AND SUPERIOR PERFORMANCE FOR CLASS B FIREFIGHTING FOAM APPLICATIONS Mike Willson Willson Consulting, Tinderbox, Tasmania, AUSTRALIA

*“In humans, PFCs have been found predominantly in blood as some are known to bind strongly to plasma proteins. The main sources of PFCs for human exposure is the diet however PFCs are also present in surface coatings on fabric and consumer products. As a result of their widespread use PFCs are also found in sludge from waste water treatment plants. There are hundreds of chemicals that are classed as PFCs and little is known about their toxicology.”* PFOS AND PFOA: SCREENING CRITERIA AND WHAT HEALTH INVESTIGATION LEVELS MIGHT LOOK LIKE Giorgio De Nola, Alan Bull, Anthony Lane Cardno, Level 4, 501 Swanston St., Melbourne, 3000 VIC Australia

## General Background Information

The most dispersive use is fire fighting foams, but there are over 3,000 compounds fluorinated with many unknown formulations. Examples of concern to Friends of the Earth are:

- Per-and Poly-Fluoroalkyl Substances (PFAS ) used as Non-stick, liquid repellent, stain resistance with hundreds of other unknown application , e.g. cosmetics, dental floss, paints, food packaging, carpets, etc.
- PFOA (C8) used in Teflon,
- PFOS (C8) in Scotchgard and Gore-Tex
- Aqueous firefighting foam (AFFF) containing PFASs now showing up widely in military installations, Airports, Firefighter training sites.
- Wastewater and accumulation through the ecosystem

PFOS is classified under the Stockholm Convention. It is very persistent, toxic to humans, bioaccumulative and carcinogenic. It has also been associated with problems with immune systems, endocrine disruption, hepatic systems, kidney disease and liver disease. The class of chemicals perfluorochemicals have also been linked to reduce vaccine response in children as well ADHD.

There is also a push for PFHxS to be listed as a Persistent Organic Pollutant. PFOA is in the last stage of assessment.

*“In September, the United Nation’s Persistent Organic Pollutants Review Committee to the Stockholm Convention, said that PFOS and PFOA were [linked to six diseases](#), including some cancers, and warranted a global response...”*

<http://www.news.com.au/technology/environment/the-places-in-australia-where-you-cant-drink-the-water/news-story/e4eb54914663bc0dc49db3accf0980a7>

PFHxS is in textiles, leather, papermaking, electroplating, oilfield (gas fields?), fire control, photosensitive material, synthetic material and pesticides. It’s already been widely detected in New South Wales and Queensland.

Health issues with Fluorinated organic compounds (FOC’s) include: reproductive impairment, vaccine interference, cholesterol increases, interfere with vaccines, development problems, suppressed immune systems.

## Further Thoughts

*“The federal jury also found DuPont acted with actual malice, raising the possibility of punitive damages, Bilott said. It is the third time jurors in Columbus, Ohio federal court have found DuPont liable for injuries linked to perfluorooctanoic acid, known as PFOA or C-8, which is used to make Teflon. <http://www.reuters.com/article/us-du-pont-verdict/duPont-hit-with-2-million-verdict-over-teflon-making-chemical-idUSKBN14A24Z>*

*There are more than 3,400 lawsuits pending against DuPont over the chemical leak, which allegedly contaminated local water supplies. Chemours Co ([CC.N](#)), the performance*

*chemicals unit which was spun off from DuPont last year, has an agreement to cover the costs of such lawsuits.”*

*“Thousands of people in 18 communities near military airfields across Australia live in “priority one” contamination zones... “At first they tried to normalise the contaminations, saying they were in everyday products like non-stick frying pans and pop corn bags,” Ms Kelly told The Australian. “But quickly it was followed with advice from the NSW Health Department that we weren’t to consume the water, any eggs from our chickens, eat any meat products which had consumed the water.”* <http://www.news.com.au/lifestyle/health/the-pretty-country-road-that-hides-a-deadly-secret/news-story/b04c4ffcdb3a6d71374e6c4b7c6d8793>

The Australian interim and draft ecological criteria listed on page 25 of the NEMP is not publically available, so comments regarding how these figures were derived cannot be made as the information is “confidential”. When were these guideline levels determined? Who determined them? What information was used to determine these levels, which appear to be high.