



Submission comment

Draft PFAS National Environmental Management Plan: Version 3.0

Submitted online

28 February 2023

Introduction

This submission is written on behalf of Concerned Waterways Alliance and Friends of Latrobe Water. Both our groups are working with the Victorian Government as active stakeholders to protect and manage the health of our rivers and environment and human health via effective policy reform and implementation. Our interest extends to the proposed expanded use of recycled water in Victoria.

- The Concerned Waterways Alliance¹ is a network of community and environment groups from Gippsland to the Otways. We share a deep concern about the degraded state of southern Victoria's rivers, wetlands and aquifers, and are committed to improving their health for the benefit of current and future generations.
- Friends of Latrobe Water² formed for the purpose of protecting and advocating for Latrobe Valley water sources, connected waterways and Gippsland Lakes from brown coal activities including historic mining activities, legacy and coal ash contamination and mine rehabilitation activities, including utilising the legal system to facilitate that protection.

Our groups are participating in the draft NEMP V3 consultation process to influence government decisions on their duty of care to our communities and due diligence how PFAS chemical use, contaminated waste and legacy contamination to our environment is managed in Australia. Responses relate to common issues of concern in our communities.

Overview

The Draft NEMP V3 is not consistent with other international countries particularly the focus on only 3 long-chain PFAS compounds PFOS, PFOA and PFHxS. With the goal to reduce PFAS exposures under the original guiding principles in NEMP V1, the proposed management strategies via non-regulatory frameworks and failure to update related acts and standards in the NEMP V3

cannot possibly produce the necessary outcomes our communities need to be protected via the food we eat, the water we drink and the air we breathe.

The present draft is focusing on providing a consistent approach as a national guidance document with the intent to deliver consistency. But then relies on the different legislation of each EPA jurisdiction giving the separate state and territories full discretion in how they approach the guidance frameworks.

The NEMP V3:

- is over analysed, fragmented and contradictory.
- too focused on WWTP as the key to control PFAS contamination.
- mistakenly assumes regulatory oversight is ensuring existing statutory regulations and practice guidelines are complied with by industry.
- too focused on data collection but when there is data do not question why it's there and what the potential risks are.
- is using science and outdated standards that is not authoritative nor current potentially increasing the PFAS exposure loading to public health and on the receiving environment ecosystems.
- is not in the national interest, nor can it be an effective one stop shop on PFAS and wastes as too much critical information is outdated, missing and not aligned with international standards.
- undermines PFAS air emissions on human health contributing to depositions of fine and course particulates locally, regionally and globally.
- Undermines the use of recycled wastewater as a factor in contamination of the environment.
- cannot prevent contamination.

There is little in the NEMP V3 that gives the community some tangible measures to show how the Commonwealth (Cwlth) is providing leadership on PFAS management to prioritise achievable actions like improved labelling, enforceable disclosures, imported point-source tracking of PFAS chemicals and improved PFAS messaging. Likewise for investing in advanced treatment technologies. The Cwlth should be providing policy instruction to relevant Cwlth entities to legislate improved and updated standards or variations to prevent harm to both public health and environmental biodiversity. Instead, the NEMP assumes integrity by our responsible authorities to oversee monitoring and testing frameworks to establish human and environmental risk assessments on flawed and outdated science.

At the recent Victorian hosted NEMP V3 webinar the Cwlth and Victorian Environment Protection Authority (VicEPA) provided conflicting information which forms the basis for parts of this submission.

Responding to a question on new European Union (EU) PFAS standards in comparison to Australia's outdated Tolerable Daily Intakes (TDI) set by Food Standards Australia New Zealand (FSANZ) the presenters stated, *'FSANZ were involved in the process of developing the Draft NEMP 3, so the NEMP 3 takes guidance and criteria from FSANZ to inform the risk assessments which is the standard we have in Australia.'*

A complaint letter (Appendix 1) has been submitted to the FSANZ Board challenging the appropriateness of the current TDIs for PFAS and triggers for Human Health Risk Assessments (HHRA). This is based on both changing and proposed PFAS regulations in the European Union (EU) and United States of America (US).

That same consultation noted *'if FSANZ and NHMRC (derives the recreational and drinking water numbers) were to change the TDI in Australia, the NEMP will pick that up – that's just an editorial change and follow that through'.*

Changing TDIs will significantly alter the risk assessments noted in section 8. This is not just an editorial change and a simple follow-through.

2 Australia's international obligations

Australia is not just accountable to future obligations with the Stockholm Convention but to global citizenship. National reforms must align with international standards to improve trade and economic diversity. This Draft is the third iteration of a National Environment Management Plan on PFAS but has been presented for consultation lacking rigor and achievable priority actions which cannot align with the global move to declare PFAS, as a group, hazardous.³

3 Guiding principles

Responsible authorities not being responsible

The NEMP V3 has continued to distance itself from any accountability on guiding principles. NEMP V1 provided the avenue for *'environmental regulators, under their jurisdictional legislation, may take action to restrict the use of PFAS-containing products'*.⁴ However, there continues to be a huge disconnect in policy on what is written to the reality of what is ignored. The Guiding Principles are not being applied

Line 197-208

- The way the precautionary principle is utilised in Australia is deceptive based on FSANZ risk-weighted assessments as the safe end point which does not align with present science or other international country's standards. This guiding principle needs to be further clarified to hold regulators and planners to account on due diligence and duty of care in managing our natural resources.

- **Intergenerational equity.** Australia has been very slow to make polluters accountable for PFAS management with poor regulatory oversight and enforcement which includes heavy metals and persistent organic pollutants (POPS). The pollution loading for future generations based on the NEMP V3 frameworks continue the ongoing lack of political will to hold polluters to account. Lack of monitoring for industry pollution alongside transparency of what chemicals are discharged are condoned by our regulators.
- **Conservation of biological diversity and ecological integrity.** This principle is abused by urban and regional planners able to manipulate these ideals. Monitoring is their answer which is not a protector of the environment rather it is an indicator the environment has already been impacted and is irreversible. No one is holding regulators and planners to account on due diligence and duty of care in managing our natural resources. The NEMP V3 is continuing the abuse using low environmental values, existing background contamination and modified environments to continue cumulative polluting activities undermining the ability for the environment to find balance.

209-219

- **Improved valuation, pricing and incentive mechanisms.** Again, this is open to abuse by planners, developers & those that ignore bylaws and regulations. Government is hypocritical about natural capital selectively applying a criterion when suits. Case in point is the NEMP V3 encouraging land application of biosolids yet, admitting there is still so much unknown about the group of PFAS chemicals, their ecotoxicity, bioaccumulation and human health effect. Management strategies come down to costs. If it is not reasonable to the polluter, EPA and other regulatory agencies selectively allows the polluter to avoid statutory obligations giving a licence to pollute potentially rendering arable land unusable for ever.

243-245

- **Consideration of sustainability, including environmental, economic and social factors...** Point source identification is cost effective but what the NEMP V3 puts forward with a risk-weighted approach is leaving it up to state and territory EPAs to apply different management frameworks based on guiding principles that are abused. VicWater provided comment⁵ in NEMP V2 putting more onus on the regulators but who is auditing the regulators.

8. **Other comments:**

- *EPA Victoria needs to play a crucial role in reducing PFAS at the source, where a reduction of PFAS entering the catchment can be achieved through education and enforcement (rather than regulating the waste treatment plant operator). An EPA education-heavy approach will likely not result in large-scale PFAS reductions; it is recommended that EPA Victoria map polluters and focus on point-source pollution prevention efforts to stop PFAS entering the catchments in the first place (through regulation and fines). It is also recommended that EPA Victoria conduct more regular auditing of trade waste customers who may be discharging PFAS.*

3.1 General environmental obligations concerning PFAS

For Victoria, the General Environmental Duty (GED) under the Victorian Environmental Protection Act (Vic EPA) has obligations to minimise risks to human health and the environment so far as reasonably practicable.

- What is reasonable for a WWTP to test for regarding Contaminants of Emerging Concern (CEC).
- Is the present suite of PFAS testing effective.
- Are the risks known or can they be minimised and what cost is considered reasonable.
- Would the discharging obligations under the GED only apply to the present generalised toxicity tests to cover due diligence.
- Can WWTPs prove that biosolids and recycled water are safe and free from concentrations of PoPs, CECs and heavy metals.

256-258

- **contamination, for example, by determining the concentrations of PFAS present and/or the nature and location of PFAS sources**

The NEMP V3 has clearly revealed the extent of PFAS in products, materials, articles and more.

Labelling

It should be noted that product labelling often does not include detailed composition or a substance list. Small businesses and the consumer may not be aware whether the product includes PFAS. The following highlights what the industry is asking but what the Cwlth are not prepared to do.

Water Services Association of Australia,⁸

*Our utilities are asking that additional measures be considered to control potential human health and environmental impacts; such as regulation on chemical imports, **chain of custody tracking** and mass balance accounting of such chemicals and a requirement to disclose pollution events by the user of these chemicals (including discharge to sewer).*

This should be an urgent priority that the NEMP should be taking the lead on but for the interim the Cwlth should use the EU's PFAS guide.⁶

PFAS chemicals are used in many product categories, even where you least expect it. The PFAS Guide can alert you to products likely to contain these chemicals and give your company advice on how to phase them out.

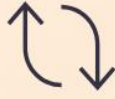
The five EU Member States behind the proposal submitted a broad restriction proposal that clearly shows the need for the industry to put all resources into phasing out all PFAS substances.

*At the same time, determination to get rid of "forever chemicals" is gaining momentum from other stakeholders as well. Over a **hundred companies** have, for example, come together to support a ban on PFAS.*

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Investigate



Phase out



Concern



Regulation



Sector

Stockpiling and storage

The National PFAS Position Statement is the interim guidelines prior to a consistent national framework. It is based on 'non-regulatory ways to reduce PFAS releases'⁷ which is simply absurd.

*Australian governments have been working collaboratively for some time to identify and treat existing PFAS contamination in the environment. All agree that more effort should be focused on preventing further PFAS releases into the environment.*⁸

However, what the Cwlth and state regulators declare is not the reality. Do they actually know what stockpiles exist that present a potential disaster to the sewer system and environment.⁹

Are PFAS containing fire-fighting foams still being used in Australia?

Fire-fighting foams containing PFAS have been used in fire training drills and emergencies by the public and private sectors in Australia and worldwide for more than three decades.

The Australian Government has worked since 2002 to reduce the use of certain PFAS. As far as we know at this point in time, the biggest source of concentrated emissions of PFAS in Australia is from historical use of PFAS-containing fire-fighting foams, particularly at fire-fighting training grounds. Use of these fire-fighting foams has been significantly reduced and discontinued in most cases.

In 2003 Airservices Australia began phasing out PFAS-containing fire-fighting foams at all civilian airports where it operates, and has not used them at civilian-only airports since 2010.

From 2004, the Department of Defence commenced phasing out its use of PFOS and PFOA-containing fire-fighting foams and switched to 'Ansulite', which only contains trace elements of PFOS/PFOA and is only used in emergency situations or in controlled environments to test equipment. The Department of Defence is currently undertaking a review of alternative fire-fighting foams that meet capability requirements as well as environmental protection requirements.



Victoria - photo evidence, above, of the event on 7 December 2022 reveals ongoing mismanagement to reduce potential PFAS exposures. These photos show bottles (both empty & full) of the toxic PFOA and PFOS Aqueous Film Forming Foam (AFFF) in a sink, out in the open, accessible to anyone walking by with no barriers erected around the site. As a concentrate, AFFF is toxic and deadly.¹⁰ How could this occur?

The regulators were contacted but Vic EPA are still to provide an outcome for their investigation!

Poor messaging

The Australian Government's communication messaging around PFAS health risks is misleading, dangerously outdated or factually incorrect. Many federal government web pages, responsible authority advisories including enHealth guidance facts sheets often have comments noting, *'There is currently no consistent evidence that exposure to PFAS causes adverse human health effects.'* This is not best practice health guidance particularly when the science is cherry picked and the application of health risk assessments are flawed in heavily contaminated areas.

*Most health communications do not distinguish levels of evidence for health outcomes and overemphasize uncertainty, dismissing legitimate reasons for concern in affected communities. Critically, few emphasize helpful approaches to interventions.*¹¹

The research journal concluded: *Immediate action should be undertaken to review and improve official health communications intended to inform the public and health providers about the risks of PFAS exposure and guide community and medical decisions.*

It would be expected, and demanded, if the Australian Government and regulators were truly interested in protecting public and environment health from harm, they would follow US EPA lead how to provide effective and meaningful messaging.¹²

5 PFAS monitoring

The only protection our communities have for monitoring are our EPAs.

375

- If the data used is assessed under the present FSANZ declared safe end point, then it will not be credible or suitable *‘to inform the assessment and management of PFAS contamination for the protection of human health and the environment.’*

377-379

- **Monitoring also provides the evidence base for decision-making...** Victoria has minimal monitoring of our air, water and soils and it’s debatable to the rigor given site placements of air monitoring and lack of water and sediment testing. How this point source pollution can be managed and tracked for compliance and approval of licenced discharges could undermine efforts to reduce PFAS exposures to the environment and human health.

5.1 Planning and design of environmental monitoring programs

385

- The premise of ‘planning and design of an environmental monitoring program should reflect its specific aims’ but monitoring of our Victorian PFAS contaminating industries is already lacking integrity. Jurisdictional EPAs should prioritise review of all approved discharge licences for effectiveness. Any industry refused trade waste agreements with WWTPs due to toxic chemical loading should be closely monitored for onsite treatment and not illegally discharging in high rain events.

5.2 Ambient monitoring

PFAS persistence

The fact PFAS are persistent, have persistent degradation products and poorly reversible risks associated even with low-level PFAS exposures is the real issue.

- Australia’s messaging undermines the seriousness of the PFAS legacy and contamination impacts on human health. While this document is referenced for routine sampling, its air characterisation is underwhelming.

8.7.4 Sediment quality

- To avoid resuspending PFAS contaminated sediments from dredged material would depend on EPA regulators enforcing compliance on their own publication guidelines.¹³

A recent challenge by community members to an application for a 10-year dredging program for maintaining ocean access to the Port of Gippsland Lakes has resulted in a request for further information by the Department of Energy, Environment and Climate Action (DEECA) because no regulator has been

overseeing the past dredging works in an area known to be a toxic contaminant sink including PFAS.

Appendix B PFAS Ambient sampling guideline - Agree that *'current ambient programs have not considered soil or air comprehensively'* but recommend the Cwlth make it a priority rather than *'include as future work progresses'*.

Atmospheric deposition

The NEMP V3 pays little attention to the human health implications of atmospheric deposition. While the Australian Government continue community messaging that long-chain PFAS are decreasing in pooled blood samples, the opposite is occurring as short-chain PFAS are increasing.

However, atmospheric concentrations are a different story increasing in both long and short-chain PFAS with short-chain degrading to their terminal precursors of PFOA and PFOS. They are circulating in the air we breathe and depositing to the water we drink and on the food we eat.

What space is safe?

The particles deposited in the breathing space range from fine to coarse. Inhaled fine particulates enter the bloodstream thereby posing direct risks to human health. Cumulative inhalation from airborne PFAS poses a greater risk for those contaminated farming communities working the land and workers at WWTP, landfills, firefighters and those industries using PFAS as examples.

Australia does not have any occupational workplace PFAS exposures limits/protections under any occupational worksafe acts. Table G-1 in the NEMP V3 only mentions WWTP as potential safety risk for worker safety. Even then it does not mention aerosols.

The following points come from 2022 research article, *Per- and polyfluoroalkyl substances in the atmosphere of waste management infrastructures: Uncovering secondary fluorotelomer alcohols, particle size distribution, and human inhalation exposure*.¹⁴

The atmospheric lifetime of the many PFAS chemicals can allow them to be transported over long distances which PFAS can then degrade into stable PFCAs. This is why we are seeing PFAS where we shouldn't.

- Landfills release both leachate and gas. Relatively low water solubility and high volatility can be emitted into the atmosphere with landfill gas making landfills time-delayed emission sources.
- Generally, leachate from landfills is transported to WWTPs for further treatment before being discharged into receiving waters and may serve as secondary input sources to the surrounding environment.

- Most studies focus on aqueous discharges (e.g., leachate and wastewater) but recent research highlighted waste streams as critical sources of PFAS in the environment with fugitive atmospheric releases occasionally investigated.
- Bioaerosols laden with organic pollutants (e.g., PFAS) can enter the atmosphere from the WMIs and be transported to nearby communities during waste disposal, storage, and treatment processes, PFAS precursors, which coat industrial and consumer products, can be biologically transformed into smaller and more stable perfluoroalkyl carboxylic acid (PFCAs)
- Several unknown transformation pathways of PFAS forming complex and unidentified byproducts, further expand the enormous PFAS inventory.
- Direct sources from surface water and soil, the indirect sources for PFAS in groundwater include the atmospheric deposition and the precipitation of snow, ice and rainfalls.

The comments from this research article are profound, *Outside the Safe Operating Space of a New Planetary Boundary for Per- and Polyfluoroalkyl Substances (PFAS)*- A planetary boundary has been exceeded due to PFAS levels in environmental media being ubiquitously above guideline levels.¹⁵

Atmospheric deposition also leads to global soils being ubiquitously contaminated...Levels of PFAAs in atmospheric deposition are especially poorly reversible because of the high persistence of PFAAs and their ability to continuously cycle in the hydrosphere, including on sea spray aerosols emitted from the oceans. Because of the poor reversibility of environmental exposure to PFAS and their associated effects, it is vitally important that PFAS uses and emissions are rapidly restricted.

Persistence is generally seen as a less immediate hazardous property than toxicity, but it actually is the key factor that lets pollution problems spiral out of control. This is because persistence enables chemicals to spread out over large distances, causes long-term, even life-long exposure, and leads to higher and higher levels in the environment as long as emissions continue.

...We argue that if drinking water health advisories and other guidelines designed to protect human health are exceeded due to the global environmental spread of PFAS, then there is a real danger of global health effects (e.g., affecting human physiology) occurring and that it can be argued that the planetary boundary for PFAS is exceeded.

Disclosures

Wastes

The NEMP V3 has jumped too many steps forward without first consolidating point source pollution that should have been addressed in NEMP V2 based on extensive water utility feedback.

Because the Cwlth has been very slow to move on any regulatory actions the NEMP V3 is now focusing on preventing point source contamination into the sewer system yet, not prepared to introduce control mechanisms that only the Cwlth can effectively legislate and manage. Additionally, our EPA need to regulate and enforce as obligated by their acts rather than captured by industry.

Wastewater treatment plants and water utilities have already done a lot of research on emerging contaminants, including PFAS, which are in the public domain. These studies highlight the following problems:

- Provides evidence of the unfettered use of highly toxic chemicals in a growing list for which there are no guideline values for occurrence, toxicity or removal.
- Conventional treatment plants fail to remove long and short-chain PFAS.¹⁸
- Exposes that our regulatory agencies aren't regulating, and guidelines and standards are too outdated to protect public & environmental health.
- Dumbing down of public policy by bureaucrats to pretend their frameworks can prevent contamination and risk exposures to the environment.

*More than 40,000 industrial chemicals are available for use in Australia...However, a small but significant proportion of industrial chemicals can cause harm if they are not managed properly. In some cases, chemicals of concern such as per- and poly-fluoroalkyl substances (PFAS), lead, mercury, dioxins and brominated flame retardants, can endanger ecosystems and affect human health...National frameworks exist to consistently manage products used in food, human and veterinary medicines, and pesticides.*¹⁹

The fate, environmental and health impacts of many chemicals remain unknown. They are not listed chemicals to test for but adding to the growing list of Pollutants of Concern (POC). To think the NEMP V3 can effectively guide WWTPs to sample and monitor these and make a difference to PFAS exposures without legislated policy is illogical.

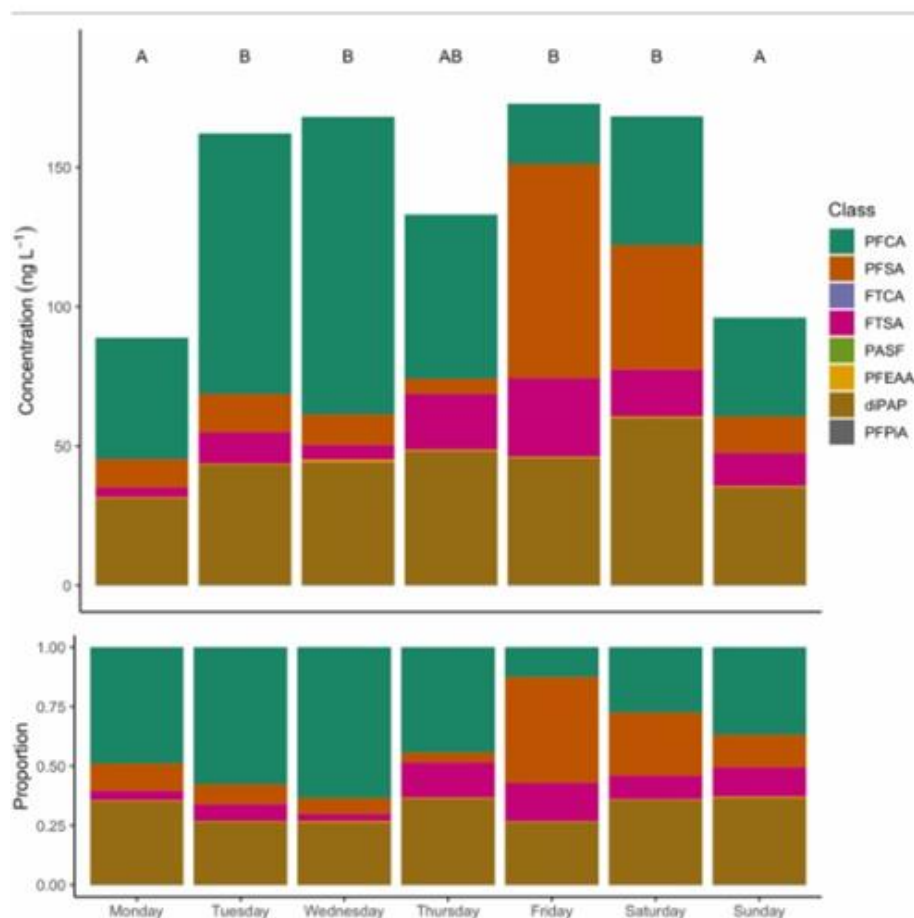
- Which chemicals do WWTPs test for in the influent and sludge?
- How do WWTPs accept and treat waste if the chemical is not known or listed?
- How do the WWTPs account for the many substitutes and short-chain PFAS compounds that are not on the standard suite of PFAS?

The Australian Government is playing Russian roulette with our environment and public health as proven by Australia's FSANZ asserting PFAS in food is safe to a certain end point which is highly inconsistent with other country's national food and drinking water frameworks.

PFAS monitoring and testing

Standard measurements pick up the PFCAs²⁰ but not their precursors.

Di-substituted polyfluoro alkyl phosphate ester (diPAPs) are replacement compounds for PFAS that have not been used in Australia but are finding their way to our WWTP in high readings.²¹ DiPAPS partition to sludge and persist in soil²² more so than recycled water and will continue to degrade in time once in the environment so need to be a priority for biosolids testing. There are too many PFAS compounds that are not on the watch list which are sometimes present in high concentrations which for some, will eventually degrade into precursors. But the NEMP V3 only states (line 3162) that '*jurisdictions may consider requesting analysis of an expanded suite including diPAPS and FTCAs...*'.



3215

How do these inform risk assessments for the land application of biosolids? Australia needs to expand our monitoring and testing profiles. DiPAPs are increasing which means we have a slow release in the environment that will eventually degrade into PFOS.

Grab sampling is also not a reliable indicator for concentration.²³

Biosolids

Compost waste criteria

Ongoing land application principles of biosolids and wastewater are flawed. Wastewater treatment plants (WWTPs) have been suggested to be a point source for PFAS to the environment due to emission of effluent and sludge.²⁴ Instead, the NEMP V3 refers to WWTPs as a diffuse and secondary source. The influent is a mirror of our society with WWTPs the end of the pipeline. The decision to reuse the waste as biosolids is an action marketed as 'beneficial reuse'. With PFAS partitioning more to sludge than water, biosolids pose a greater risk to the environment.

Stockpiling of PFAS contaminated sludge or evaporative ponds do not remove PFAS rather the site and surrounding areas becomes more contaminated via concentration, leaching, persistence in soil and mobilising to groundwater and other environmental media. This is plain to see with the stockpiles of solid waste accumulating at WWTP in Victoria.²⁵

Section 10, 12, 14, 15, 19 and Appendix G are contradictory applying guidance related to compost, waste and criteria. In relation to risk, what is the difference between PFAS contaminated soils and PFAS contaminated compost processed from both biosolids and trade waste? Combining biosolids with trade waste to create compost then dilutes the biosolids and allows the manipulation of criteria based on weight per kilogram.

Section 14.6 for landfill acceptance criteria apply to the disposal of solid PFAS-contaminated materials to landfill based on the Stockholm Convention and the Basel Convention capped at 50 mg/kg. While this is a high ratio of PFAS loading, it appears this ratio is also applied to PFAS wastes accepted by companies for organic composting. This would seem to contradict a risk-based approach to managing WWTP solids and proper characterising of PFAS-contaminated waste (line 277) - sending it to a facility licensed to accept it, noting dilution is not acceptable for example in soil, air, compost or other wastes or products.

They are both contaminated but VicEPA's Interim criteria for reuse of PFAS-impacted soil²⁶ has a significantly lower PFAS criterion than biosolids. Interim criterion for the reuse of soil which may contain PFAS based on a limit of reporting (LOR) for the sum of 0.004 mg/kg

- PFOS <0.002 mg/kg
- PFHxS <0.001 mg/kg
- PFOA <0.001 mg/kg

Biosolids have been investigated through the outdated FSANZ PFAS triggers for Human Health and Ecological Risk Assessment (HHERA) having a new margin of safety factor for various uses which would necessitate new labelling. These cannot be declared safe in comparison to new international standards.

To give feedback on Margin of Safety in Table 11 is impossible when considering all factors.

Water utilities gave feedback on biosolids for the NEMP 2'

Beneficial reuse of biosolids and recycled water will require a holistic and health-centric approach, which will need to be articulated more clearly. There is a current dichotomy between the current mandate to encourage beneficial reuse of biosolids and recycled water, versus the (as yet unknown) risk of PFAS potentially impacting human health. Biosolids applications on land could potentially lead to future health impacts and landfilling causes potential detrimental leachate. Clear expectations relating to the disposal and/or treatment of PFAS are needed.²⁷

The Draft is still ignoring their concerns.

Characterising biosolids based on misleading principles with the waste frameworks is enabling a new point source of PFAS contamination to the receiving environments all the while declaring the need to prevent the spread of contamination and exposures to environment.

Example -

Gippsland Water manage an EPA licensed waste treatment and composting facility which accepts and treats EPA prescribed and non-prescribed wastes with the majority used as part of their composting process. The PFAS contaminated content for the end compost is capped at 40mg/kg but regularly in the high 30's. It then forms the basis of a branded Recycled Compost product distributed to the local agricultural industry as a soil improver under the guise it meets strict requirements set by AS4454 -2012²⁸, the Australian Standard for Composts, Mulches and Soil Conditioners. This standard is outdated and does not even reference PFAS as emerging contaminants. These are high-value commercial lands where food safety should be of greatest importance.

Section 12.3 continues the inconsistency leaving it to the environmental regulator to consider appropriate reuse. PFAS has leached to the groundwater²⁹ and surface water of the major Gippsland Lakes system with Ramsar listing.

No composting company discloses that their product contains PFAS with the potential to persist and bioaccumulate in plants and food produce.

SDS information of branded Gippsland compost and soil conditioner *Toxicological Information* is hard to discern its safety to use due to meeting classification principles and criteria that appear to be outdated. Same for Ecological Information declaring,

- Ecotoxicity: No further relevant information available.
- Aquatic toxicity: No further relevant information available.
- Persistence and Degradability: No further relevant information available.
- Bioaccumulative Potential: No further relevant information available.
- Mobility in Soil: No further relevant information available.

15 TICKS OF APPROVAL

Fully compliant to AS4454 standard and EPA 508 guidelines	✓
Improves soil moisture retention and soil CEC levels	✓
Contains valuable N-P-K-S nutrients and Trace Elements	✓
No withholding period at any application rate once applied	✓
Environmentally beneficial and organic in nature	✓
Increases worm activity and soil friability	✓
Provides high levels of Organic Matter	✓
Increases soil biology and improves microbial activity	✓
Natural earthy smell with no offensive odour	✓
Fully pasteurised and monitored 12 week composting process	✓
Independent Lab Analysis testing for consistency on every load	✓
No weed seeds or harmful pathogens	✓
Temperature and moisture tested daily	✓
Improves soil aeration and increases plant root depth	✓
Neutral pH to improve soil acidity levels	✓

Recycled water

Will a risk-based approach dealing with the numerous substances be appropriate when the terms ‘tolerable’, ‘acceptable’ and ‘reasonably practicable’ are the norm in water utility guidelines? Again, the Draft reference to recycled water and health management guidelines are outdated and this draft should never have progressed to the consultation stage without alignment and updating of all related acts, standards and risk assessment. This includes consideration of FSANZ trigger levels not in line with international standards.

Appendix G.9.3 states,

‘The use of recycled water requires careful management to avoid contamination of sensitive environments or food webs with repeated applications of persistent substances, including PFAS. The standards and criteria provided in the NEMP and the NWQMS (National Water Quality Management Strategy) for environmental water and water recycling provide the basis for sound management actions...will consider what trials will be conducted before water recycling is rolled out at scale...’

Until there is a complete overall of treatment options, use, disclosures and extent of recycled water use the frameworks are unworkable.

There is now a duty of care and due diligence that water utilities will need to consider whether the use of recycled water is safe given there is already widespread use of recycled water to irrigate edible crops.

Urgent priority - to consider all acts, regulations, standards, guidelines that relate to recycle water reuse in whatever form that presently do not specify PFAS and other emerging contaminants, their properties and risks to human health and the environment.

Submission prepared by Tracey Anton on behalf of Concerned Waterways Alliance and Friends of Latrobe Water

References

¹ <https://concernedwaterwaysalliance.org/>

² <https://flowlatrobe.org/>

³ <https://communityovermining.org/pfas-food-safety.html>

⁴ <https://www.epa.vic.gov.au/for-community/environmental-information/pfas/pfas-national-environmental-management-plan>

⁵ <https://vicwater.org.au/2019/06/20/vicwater-pfas-draft-nemp2-submission/>

⁶ <https://pfas.chemsec.org/>

⁷ *Industry - The Position Statement does not impose regulatory measures or specific timeframes. Instead it outlines a nationally agreed government stance on PFAS, and a series of objectives for minimising their release into Australia's environment.*

⁸ *Ibid.,*

⁹ <https://www.pfas.gov.au/about-pfas/faq>

¹⁰ Full story - <https://communityovermining.org/pfas-stockpile.html>

¹¹ <https://ehjournal.biomedcentral.com/articles/10.1186/s12940-022-00857-9>

¹² *Our Current Understanding of the Human Health and Environmental Risks of PFAS*
<https://www.epa.gov/pfas/our-current-understanding-human-health-and-environmental-risks-pfas#:~:text=What%20We%20Know%20about%20Health,blood%20pressure%20in%20pregnant%20women.>

¹³ VicEPA Publication 691 - *BEST PRACTICE ENVIRONMENTAL MANAGEMENT GUIDELINES FOR DREDGING*

...However, typically, the concentration of a range of organic and heavy metal contaminants on the site to be dredged must be measured before dredging commences...The choice of contaminants to be measured will be based on the site history and the volume of material to be dredged.

Proponents must ensure that the suite of contaminants analysed and the intensity of sampling adequately characterise the area to be dredged.

<https://www.epa.vic.gov.au/about-epa/publications/691>

¹⁴ <https://www.sciencedirect.com/science/article/pii/S0160412022003610>

¹⁵ <https://pubs.acs.org/doi/10.1021/acs.est.2c02765>

¹⁶ <https://oehha.ca.gov/proposition-65/about-proposition-65#:~:text=Proposition%2065%20requires%20businesses%20to,are%20released%20into%20the%20environment>

¹⁷ <https://oehha.ca.gov/media/downloads/proposition-65//p65chemicalslistsingletable2021p.pdf>

¹⁸ Previous studies frequently detected ultra-short-chain and short-chain PFAS in various types of aqueous environments including seas, oceans, rivers, surface/ urban runoffs, drinking waters, groundwaters, rain/snow, and deep polar seas. Besides, the recent regulations and restrictions on the use of long-chain PFAS has resulted in a significant shift in the industry towards short-chain alternatives. However, our understanding of the environmental fate and remediation of these ultra-short-chain and short-chain PFAS is still fragmentary. <https://jimdo-storage.global.ssl.fastly.net/file/27d03f63-0ef1-491e-bf55-c3eece214877/Ateia%20et%20al.%202019.pdf>

¹⁹ <https://www.dcceew.gov.au/environment/protection/chemicals-management/national-standard/roadmap>

²⁰ Perfluorooctanoic acid (PFOA) is a long-chain perfluoroalkyl carboxylic acid (PFCA), a subset of per- and polyfluoroalkyl substances (PFAS), that does not occur naturally in the environment.

²¹ <https://www.sciencedirect.com/science/article/pii/S030438942300136X>

²² <https://setac.onlinelibrary.wiley.com/doi/pdf/10.1002/etc.5417>

²³ Ibid.,

²⁴ <https://www.sciencedirect.com/science/article/pii/S0048969722045041>

²⁵ <https://www.melbournefoe.org.au/pfas-in-victorian-biosolids-is-it-in-your-compost>

²⁶ <https://www.epa.vic.gov.au/about-epa/publications/1669-4>

²⁷ <https://vicwater.org.au/2019/06/20/vicwater-pfas-draft-nemp2-submission/>

²⁸ Abstract - <https://www.soilwealth.com.au/imagesDB/news/AS4454-2012A1.pdf>

²⁹ Wastewater - <https://www.gippslandtimes.com.au/news/2018/06/28/pfas-at-safe-levels/#:~:text=GIPPSLAND%20Water%20has%20confirmed%20that,within%20the%20health%2Dbased%20guidelines.>

Appendix 1



20 February 2023

Ms Glenys Beauchamp

Chair of Food Standards Australia New Zealand Board

By only email: secretariat@foodregulation.gov.au

Dear Ms Beauchamp and FSANZ Board members,

RE: Updating PFAS TDIs to reduce risk exposures for the Australian population

I am writing to you and the Board seeking clarification on matters related to human health risks from PFAS contaminated food, the conclusions set by the *27th Australian Total Diet Study* and the most recent proposals and regulatory changes in the European Union to set PFAS common limit values for meat, fish and eggs.

As a brief overview, I am an informed community advocate and have a blog website, www.communityovermining.org focusing on PFAS with pages relevant to *Food Safety*²⁹ and *PFAS contaminated Livestock*²⁹ providing evidence how FSANZ's Tolerable Daily Intakes (TDI) are being abused. The information provided to the community via the most recent *27th Australian Total Diet Study*²⁹ (ATDS) is outdated and a poor representative snapshot in time. The study cannot clearly establish PFAS dietary levels are safe to protect both the general populations particularly those in highly contaminated areas. Additionally, the Food Safety Code does not address producers and buyers knowingly selling PFAS contaminated livestock and produce for human consumption.

As you can see by my webpage, other peak industry associations, purporting to be independent, are defaulting back to FSANZ TDIs to justify their own position status when challenged about the risk assessments and safety of PFAS contaminated food sold to both domestic and export markets for human consumption. They are using FSANZ's non-regulatory trigger points²⁹ to identify whether further investigation may be required if PFAS is detected in analysed foods. The problem is the food is not analysed. With the focus on just three PFAS compounds, PFOA, PFOS and PFHxS this is also having far-reaching consequences for both our environment and biodiversity.

The Federal Food Safety Code,²⁹ does not permit foreign chemical agents in food unless they are legislated. PFAS (all compounds) are not legislated therefore the background level should be zero. This means it is unlawful in every state and territory under state-based Food Acts to knowingly sell PFAS contaminated foods for human consumption. The *criteria for the establishment of maximum levels in food*²⁹ are also extremely outdated. As PFAS should not be in food, whatever FSANZ apply is based on outdated, flawed reports and criteria.

These appear to be in contradiction to the TDIs and trigger points as non-regulatory measures because FSANZ's assessment has determined a small number of PFAS compounds are safe at a certain end point which FSANZ cannot and has not proved. These are potentially culpable assertions.

- Is FSANZ prepared to consider advising the Minister[s] to reassess some/all PFAS compounds as hazardous in line with five EU national authorities²⁹ and United States EPA proposal to designate PFOA and PFOS as hazardous substances?²⁹

Our Australian TDIs are used as 'safe end points' for risk assessments but how safe are they when our contemporaries have declared they are not? I put the question to an online Victorian consultation forum about the draft NEMP 3 being outdated based on the new EU PFAS common limit values and if they were liaising with FSANZ. I was told '*FSANZ were involved in the process of developing the Draft NEMP 3, so the NEMP 3 takes guidance and criteria from FSANZ to inform the risk assessments which is the standard we have in Australia.*'

This means all other relevant authorities and industry sectors can declare this value, although not legally binding, as the set parameters for modelling what is safe and appropriate for risk assessments. NEMP 3 will allow PFAS contaminated sewerage sludge as biosolids applied to agricultural land to produce food for human consumption and fodder for livestock because FSANZ says it's safe.

Do the Board now consider:

- their previous advice²⁹ for health-based guidance values (HBGVs) for PFOS, PFOA and PFHxS are safe?
- drafting a new food regulatory measure for the Minister[s] considerations as the most appropriate risk management response?
- If not, why?

While the TDIs are based on guidelines that are conveniently not legally binding, the *Food Standards Australia New Zealand Act 1991* is. The *State of Knowledge* on what ought to be known can clearly be established.

But for FSANZ, as a Commonwealth entity with statutory obligations, this is an entirely different story and could leave FSANZ Board members legally exposed having relevance with **section 9**, *Operation of Act.*²⁹

I note the Board's endorsement of the three **section 18**, 'core' objectives²⁹ for the development of food standards but how are the Board applying them?

(1) The objectives (in descending priority order) of the Authority in developing or reviewing food regulatory measures and variations of food regulatory measures are:

- (a) the protection of public health and safety; and*
- (b) the provision of adequate information relating to food to enable consumers to make informed choices; and*
- (c) the prevention of misleading or deceptive conduct.*

Section 3, *Objects of the Act*²⁹ is relevant for consumer confidence in the quality and safety of food produced, processed and sold for human consumption. Our communities need to be able to trust Commonwealth entities tasked with fulfilling policy obligation to protect public health and that of the environment. Maintaining TDIs are safe through misleading messaging is deceptive conduct. But ongoing advice²⁹ from the Australian Government states the following because of the TDIs and Health-Based Guidelines Values set by FSANZ.

PFAS exposure has not been shown to cause disease in humans. However, it has been associated with mildly elevated levels of cholesterol, effects on kidney function and effects on the levels of some hormones. The differences reported for these associations have generally been small and unlikely to be important to health outcomes.

On this point, I specifically challenge the FSANZ Board on the following sections of the *Finance, Audit and Risk Management Committee Charter*,²⁹

2. Objective *The objective of the Committee is to provide independent assurance and advice to the Board, including on the appropriateness of FSANZ's financial and performance reporting, system of risk oversight and management, compliance, governance framework, and systems of internal control.*

7.1.3 Systems of risk oversight and management; and

7.1.4 System of internal control

- Internal control framework*
- Legislative and policy compliance*
- Business continuity management*
- Delegations*
- Ethical and lawful conduct*

as obligated and in compliance with Section 17 of the Public Governance, Performance and Accountability Rule 2014,²⁹ section 45 and section 16 of the Performance, Governance and Accountability Act 2013²⁹ (PGPA Act).

SECT 16 - Duty to establish and maintain systems relating to risk and control²⁹

The accountable authority of a Commonwealth entity must establish and maintain:

(a) an appropriate system of risk oversight and management for the entity; and

(b) an appropriate system of internal control for the entity;

Victoria's Chief Environmental Scientist has stated that while long-chain PFAS are reducing in pooled blood of the general population, short-chain PFAS are increasing. However, this is not relevant for heavily contaminated areas as they are still exposed to legacy long-chain PFAS selling highly contaminated livestock and produce into the market because FSANZ have decreed the set levels are safe. Conveniently, no one is analysing PFAS levels in food from contaminated areas.

It is not happening because risk assessments based on FSANZ trigger levels ensure polluters can determine human health risk as low. No data so no problem.

- Do FSANZ continue to support the following comment –

'In Australia, exposure of the general population to perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA) is low and declining, and there is no consistent evidence that this exposure has been harmful to human health.' ²⁹

PFAS research is dependent on pooled blood testing of the general population - what were PFAS levels in the past, present and how PFAS blood levels will change in the future. This highlights two very valid points that FSANZ are both misleading our communities and/or ignoring.

1. Long chain PFAS is reducing in the general population because of regulation²⁹ which highlights political will and common-sense actions by other Statutory bodies can make a difference in reducing PFAS exposures in the general population to protect public health.
2. If short-chain PFAS compounds are increasing in pooled blood samples in the general population this would indicate there is greater exposure to PFAS from both dietary and different environmental media that FSANZ are not capturing in their surveys to provide evidence for their TDIs.

The 27th ATDS by FSANZ references their European Union equivalent, European Food Safety Authority (EFSA) 2020 journal²⁹ but selectively used data not including the assessment by EFSA to reduce the EU's Tolerable Weekly Intake (TWI) to 4.4 ng/kgbw/week for the sum of 4 PFAS compounds together FOR THE GENERAL POPULATION.

Converting TWI to TDI is 0.63ng/kgbw/day for all 4 together - PFOA, PFNA, PFHxS, and PFOS in food.

This is much lower than Australia's TDI of 20ng/kgbw/day for the sum of 2, PFOS/PFHxS plus 160ng/kgbw/day for PFOA.

- Is the Board now aware that the EU's new TWI for PFAS came into effect this year (January 2023) which will eventually have an impact on export trade of livestock and food produce?
- The Food Safety Code establishes that a foreign chemical agent should not be in food, therefore the background level for PFAS should be zero. Will FSANZ change their position and provide advice to Minister[s] that Maximum Levels (MLs) should be set now the EU has set MLs for PFAS.²⁹

The food consumption data that was used²⁹ from city and regional retail outlets is not even credible including food types chosen from where around Australia? Similarly, is there more updated data than referenced²⁹ (ATDS section 4.3.4) with the 2011-12 Australian National Nutrition and Physical Activity Survey (NNPAS).²⁹ Are our diets, nutrition, physical activities and behaviours the same as a decade ago? Along with using mean data from 90th percentile dietary exposures, this survey was already outdated before the predetermined outcomes were assessed.

Table 3: Estimated mean and 90th percentile (P90) dietary exposures to PFOS for Australian consumers aged 2 years and above

Statistic	Estimated consumer dietary exposure to PFOS*		
	(ng/kg bw/day)		
	Lower Bound	Middle Bound	Upper Bound
Mean	0.011	0.83	1.7
P90	0.032	1.3	2.6

Note: The ratio of consumers to respondents for PFOS is 77% at LB, and 100% at MB and UB.

* Based on the average of two days of consumption data from the 2011-12 NNPAS.

Australian consumption of PFOS contaminated food for both middle and upper bound ranges would be above EUs new regulatory TDIs which includes the sum of 4 PFAS compounds so the risk characterisation conclusions *that there are no public health and safety concerns for Australian consumers from dietary exposures to PFAS* can and will be challenged.

- Will FSANZ manage PFAS risk exposures from the general food supply on the same business-as-usual model claiming the levels of PFAS in the general Australian food supply are as low as reasonably achievable and acceptable from a public health and safety perspective?

Risk assessments based on TDIs, and trigger levels are being abused and need updating for hazard characterisation for all human health risks based on current scientific literature²⁹ rather than selective studies not only for PFAS in foods but for drinking water as well.²⁹

- How can FSANZ prove their trigger values are now safe when other countries are proposing PFAS be declared a hazardous substance, EU have

significantly lowered their TDIs and US EPA are proposing drinking water guidelines to levels, yet unable to be detected by existing technology?

Additionally, I have read all meeting communiqués from the Food Ministers' Meetings²⁹ with no mention of PFAS. This is particularly relevant as obesity is associated with PFAS²⁹ and is one of the Food Ministers priorities²⁹ of the Food Regulation System:

- *Supporting the public health objectives to reduce chronic disease related to overweight and obesity.*

Also, there is no reason why this Minister's forum cannot develop informed labelling of potential additives of PFAS giving consumers the right to know what is in the food they purchase. Being proactive on labelling declarations for PFAS ensures producers and manufacturers are more accountable for foreign chemicals that should not be in food.

These PFAS residues potentially tainting food could be significant as the NEMP 3 noted manufacturing of food, food packaging and food preparation products as activities associated with PFAS contamination.

These include baking paper, aluminium foil, fast food wrappers, non-stick equipment including food processing facility surfaces, pipes, tanks and valves, and firefighting especially at facilities where bulk oil is used. Lack of any insights by FSANZ on fluorinated containers and wrappers leaching PFAS into food is irresponsible as the packaging issue is unchecked in Australia. Food Safety includes removing residues of PFAS and other PoPs from consumed food. The Ministerial Food Forum now needs to collaborate with ALL our international traders on the Maximum Levels for consistent international agriculture trade.

In conclusion, I believe the following has relevance for the FSANZ Board to consider regarding their due diligence.

Directors Duties - Hutley SC/Davis [the Hutley Opinion] advice on Climate Change litigation,²⁹ could potentially apply²⁹ to FSANZ directors past, present and future, who may also find themselves legally liable for failing to adopt 'best practice' international TDIs. The Hutley Opinion warned that climate change being a foreseeable risk imposed a duty of care and due diligence obligation on directors under the Corporations Act 2001, s180.²⁹ Their opinion was that "company directors who fail to consider climate change risks now could be found liable for breaching their duty of care and due diligence obligation in the future. [And that] "a negligence allegation against a director who had ignored climate risks was likely to be only a matter of time."²⁹

Importantly, the Hutley Opinion was adopted by the Victorian Government entitled "Guidance to Managing Climate Risk - Guidance for Board Members and Executives of Water Corporations and Catchment Authorities, June 2019."²⁹

Likewise, were FSANZ to ignore "best practice" international standards, it could find itself the subject of negligence litigation for having ignored foreseeable risks when setting its TDIs.

Class actions are increasing and defending them increasingly expensive. Inevitably, decisions made by FSANZ in relation to the safety of TDIs, based on your reports, will be used to show negligence and failure to exercise due diligence and duty of care. FSANZ witnesses will be called and, if FSANZ loses, the financial penalties could be substantial. Furthermore, the public scandal that would surround such a court case would also present significant reputational risk to FSANZ and even the Government.

I await your response with interest.

Your sincerely

Tracey Anton
Community Over Mining

References

²⁹ <https://communityovermining.org/pfas-food-safety.html>

²⁹ <https://communityovermining.org/pfas-livestock.html>

²⁹ <https://www.foodstandards.gov.au/publications/Documents/27th%20ATDS%20report.pdf>

²⁹ 'Trigger points are the maximum concentration level of these chemicals that could be present in individual foods or food groups so even high consumers of these foods would not exceed the relevant TDI. Trigger points were proposed for a range of food commodities which may be sourced on or near potentially contaminated sites including fish and seafood, animal products, fruit and vegetables. They may be used by authorities analysing PFAS in food to indicate when further investigation may be required (FSANZ, 2017c).'

<https://www.foodstandards.gov.au/publications/Documents/27th%20ATDS%20report.pdf>

²⁹ Victorian FOOD ACT 1994 - SECT 4E - Meaning of *unsuitable food*:

(1) For the purposes of *this Act*, food is *unsuitable* if it is food that--

(d) contains a biological or chemical agent, or other matter or substance, that is foreign to the nature of the food.

(2) However, food is not *unsuitable* for the purposes of *this Act* merely because--

(d) it contains any matter or substance that is permitted by the Food Standards Code.

²⁹ Contaminants in food are substances that serve no technological purpose and whose presence may lead to adverse health effects. Therefore, robust risk assessments and management options are used to reduce any risk from a contaminant to 'As Low As Reasonable Achievable' (ALARA) (ANZFA; 1998a; Abbott et al, 2003)).

... Proposed MLs will be consistent with Codex levels, where possible. However, harmonisation with Codex is secondary to measures put in place to protect the public health and safety of Australians and New Zealanders (NFA 1999).

<https://www.health.gov.au/sites/default/files/documents/2022/07/perfluorinated-chemicals-in-food-criteria-for-the-establishment-of-maximum-levels-in-food.pdf>

²⁹ <https://echa.europa.eu/-/echa-publishes-pfas-restriction-proposal>

²⁹ Proposed Designation of Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) as CERCLA Hazardous Substances <https://www.epa.gov/superfund/proposed-designation-perfluorooctanoic-acid-pfoa-and-perfluorooctanesulfonic-acid-pfos>

²⁹ <https://www.foodstandards.gov.au/consumer/chemicals/Pages/Perfluorinated-compounds.aspx>

²⁹ **Section 9 - Operation of Act**

(1) Without prejudice to its effect apart from this section, this Act has effect for any or all of the following purposes:

(a) for purposes connected with fixing:

(i) the standard of food sold by corporations; or

(ii) standards in relation to activities undertaken by corporations in respect of food before, or in connection with, its sale, where, in the case of trading corporations, those activities are undertaken for the purpose of the trading activities of the corporations;

(b) for the purpose of ensuring, to the extent that the Constitution permits, that trade and commerce in food:

(i) between Australia and places outside Australia; or

(ii) among the States;

is carried on in an efficient and profitable manner;

(c) for purposes connected with the regulation of food and food standards in the Territories;

(d) for purposes connected with controlling the standards of all food supplied to the Commonwealth, its authorities and its instrumentalities;

(e) for purposes connected with the fixing of weights and measures in respect of food...

http://classic.austlii.edu.au/au/legis/cth/consol_act/fsanza1991336/s9.html

²⁹ **Section 18 - Objectives of the Authority in developing or reviewing food regulatory measures and variations of food regulatory measures:**

(1) The objectives (in descending priority order) of the Authority in developing or reviewing food regulatory measures and variations of food regulatory measures are:

(a) the protection of public health and safety; and

(b) the provision of adequate information relating to food to enable consumers to make informed choices; and

(c) the prevention of misleading or deceptive conduct.

(2) In developing or reviewing food regulatory measures and variations of food regulatory measures, the Authority must also have regard to the following:

(a) the need for standards to be based on risk analysis using the best available scientific evidence;

(b) the promotion of consistency between domestic and international food standards;

(c) the desirability of an efficient and internationally competitive food industry;

(d) the promotion of fair trading in food;

(e) any written policy guidelines formulated by the Forum on Food Regulation for the purposes of this paragraph and notified to the Authority...

http://classic.austlii.edu.au/au/legis/cth/consol_act/fsanza1991336/s18.html

²⁹ **Section 3- Object of Act**

The object of this Act is to ensure a high standard of public health protection throughout Australia and New Zealand by means of the establishment and operation of a joint body to be known as Food Standards Australia New Zealand to achieve the following goals:

(a) a high degree of consumer confidence in the quality and safety of food produced, processed, sold or exported from Australia and New Zealand;

(b) an effective, transparent and accountable regulatory framework within which the food industry can work efficiently;

(c) the provision of adequate information relating to food to enable consumers to make informed choices;

(d) the establishment of common rules for both countries and the promotion of consistency between domestic and international food regulatory measures without reducing the safeguards applying to public health and consumer protection.

http://classic.austlii.edu.au/au/legis/cth/consol_act/fsanza1991336/s3.html

²⁹ <https://www.health.gov.au/topics/environmental-health/what-were-doing/environmental-toxins-and-contaminants>

²⁹ <https://www.foodstandards.gov.au/about/board/Documents/FARMC%20Charter.pdf>

²⁹ <https://www.legislation.gov.au/Details/F2014L00911>

²⁹ http://www6.austlii.edu.au/cgi-bin/viewdoc/au/legis/cth/consol_act/pgpaaa2013432/s45.html

²⁹ **Section 16 - Matters that may be included in standards and variations of standards**

(1) Standards, and variations of standards, developed by the Authority may relate to any of the following:

(a) the composition of food, including:

(i) the maximum amounts of contaminants or residues that may be present in the food; and

(ia) the maximum or minimum amounts of additives that must or may be present in the food; and

(ii) its microbiological status and safety; and

(iii) the method of sampling and testing the food to determine its composition;

(b) the production of food;

(c) the handling of food;

(ca) the prohibition of the sale of food:

(i) either in all circumstances or in specified circumstances; and

(ii) either unconditionally or subject to specified conditions;

(d) any information about food including labelling, promotion and advertising;

...http://classic.austlii.edu.au/au/legis/cth/consol_act/pgpaaa2013432/s16.html

²⁹ <https://foodregulation.gov.au/internet/fr/publishing.nsf/Content/pfas>

²⁹ *Study finds evidence of chemicals in Australians dating back to 1975*

<https://www.uwa.edu.au/news/Article/2022/November/Study-finds-evidence-of-chemicals-in-Australians-dating-back-to-1975>

²⁹ <https://www.efsa.europa.eu/en/efsajournal/pub/6223>

²⁹ *1.3.2 Regulation of PFAS in foods*

For Australian and New Zealand foods, FSANZ sets MLs for specific contaminants in Schedule 19 of Standard 1.4.1 of the Code (FSANZ, 2021c). MLs are only established for contaminants that present a significant risk to public health and safety and in foods that are major contributors to total dietary exposure to those chemicals. MLs are set at levels which are as low as reasonably achievable while reducing dietary exposure to chemicals of public health concern.

There are currently no MLs for PFAS in foods in the Code or overseas regulations. In the absence of MLs, general Code provisions apply including that food must be safe and suitable and levels of PFAS should be kept as low as reasonably achievable.

²⁹ <https://www.foodstandards.gov.au/publications/Documents/Appendix%203%20-%20Summary%20of%20PFOS%20analytical%20results%20for%2027th%20ATDS%20samples.pdf>

²⁹ *Food consumption data used in the calculation of PFOS dietary exposures for Australians aged 2 years and above are from the 2011-12 Australian National Nutrition and Physical Activity Survey (NNPAS) component of the 2011-13 Australian Health Survey (ABS, 2014). Only those respondents with two days of food consumption data were considered in this assessment (n=7,735).*

²⁹ <https://www.abs.gov.au/statistics/microdata-tablebuilder/available-microdata-tablebuilder/australian-health-survey-nutrition-and-physical-activity>

²⁹ FSANZ continues to carefully monitor the developing scientific literature on the potential health effects of PFAS.

²⁹ *The recommended TDIs were used by the National Health and Medical Research Council (NHMRC) to establish health-related guideline values for drinking water. These are established for PFOA and the sum of PFOS and PFHxS at 0.56 µg/L and 0.07 µg/L respectively. While not*

mandatory standards, they can be used by regulators and authorities to determine the quality of Australian drinking water. They indicate a concentration “that does not result in any significant risk to the health of the consumer over a lifetime of consumption” (NHMRC, 2019).

²⁹ <https://foodregulation.gov.au/internet/fr/publishing.nsf/content/forum-communique-2022-November>

²⁹ Certain PFAS were positively associated with greater body size and body fat, and higher rates of change over time. PFAS may be an underappreciated contributing factor to obesity risk. <https://www.nature.com/articles/s41366-021-00848-9>

²⁹ Supporting the public health objectives to reduce chronic disease related to overweight and obesity.

²⁹ Centre for Policy Development, Noel Hutley and Mr Sebastian Hartford Davis, Supplementary Memorandum of Opinion, 26 March 2019. <https://cpd.org.au/wp-content/uploads/2019/03/Noel-Hutley-SC-and-Sebastian-Hartford-Davis-Opinion-2019-and-2016.pdf.pdf>

²⁹ <https://cpd.org.au/wp-content/uploads/2019/02/CPD-Discussion-Paper-Public-authority-directors-duties-and-climate-change.pdf>

²⁹ http://classic.austlii.edu.au/au/legis/cth/consol_act/ca2001172/s180.html

²⁹ No 2, p2/34 - THE CENTRE FOR POLICY DEVELOPMENT “Climate Change and Directors’ Duties” SUPPLEMENTARY MEMORANDUM OF OPINION 26 March 2019
In the 2016 Memorandum, we expressed opinions that, as matter of Australian law, company directors can, and in some cases should be considering the impact on their business of climate change risks, to the extent they intersect with the interests of the firm. Climate-related risks (including physical, transition and litigation risks) represent foreseeable risks of harm to Australian businesses. This requires prudent directors to take positive steps: to inform themselves, disclose the risks as part of financial reporting frameworks, and take such steps as they may see fit to take, with due regard to matters such as the gravity of the harm, the probability of the risk, and the burden and practicality of available steps in mitigation. We indicated that, in our view, company directors who fail to consider climate change risks now could be found liable for breaching their duty of care and diligence in the future. Indeed, we considered then (as now) that a negligence allegation against a director who had ignored climate risks was likely to be only a matter of time.

²⁹ https://www.delwp.vic.gov.au/_data/assets/pdf_file/0023/428054/ISBN-Managing-Climate-Change-Risk-Guidance-Water-Entities-20190702-02-.pdf