

**Submission
No 15**

**INQUIRY INTO INQUIRY INTO PFAS CONTAMINATION
IN WATERWAYS AND DRINKING WATER SUPPLIES
THROUGHOUT NEW SOUTH WALES**

Organisation: Water Directorate
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Select Committee on PFAS Contamination in Waterways and Drinking Water Supplies throughout NSW

Parliament of New South Wales
Macquarie Street
Sydney NSW 2000

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NSW Water Directorate submission – November 2024

Inquiry into PFAS contamination in waterways and drinking water supplies throughout New South Wales

The NSW Water Directorate is the peak industry body for 90 local government owned water utilities (LWU's) in regional NSW. Further information about us can be found at: <https://www.waterdirectorate.asn.au/AboutUs.aspx>.

Local Water Utility overview

Local water utilities in NSW have the following attributes 'at a glance':

Table 1 - Features of the regional NSW urban water industry

• 92 Local Water Utilities (LWU's)	• 1.9 million population served in 890,000 homes and businesses
• 782,000 square kilometres in aggregate catchment area	
• 380 water supply schemes	• 300 sewerage schemes
• 49 recycled water schemes	
• 312 GL per annum of water supplied	• 160 GL of sewage treated
• \$30 Billion total replacement cost of assets	• \$1.9 Billion in annual revenue
• 2400 water operators*	• 400 engineers, technicians and managers*

* Estimate extrapolated from 2016 operator survey

Local Water Utilities in regional NSW face significant challenges including unprecedented threats to water security and quality arising from drought, bushfire, water quality challenges and the Covid-19 pandemic. In 2019, the worst drought in 130 years of records saw 50 regional community water supplies at high risk of failure. As indicated in the data above, Local Water Utilities own and operate hundreds of water treatment plants to ensure safe drinking water across vast catchment areas. Given these circumstances it is critical to adopt a balanced approach to addressing the diverse risks facing regional and metropolitan water utilities. While no risk can be completely eliminated, strategies are essential for effective management. In September 2024, Professor Stuart Khan published an informative article¹ on achieving this balance.

¹ The Guardian, Professor Stuart Khan, 3 Sept 2024 *There's no need to be worried about forever chemicals in Sydney's water catchment*, available at: <https://www.theguardian.com/commentisfree/article/2024/sep/03/sydney-tap-water-forever-chemicals-safety-pfas>

The NSW Water Directorate currently lacks access to an aggregated strategic overview or analysis of PFAS data across regional NSW. Instead, this information is exchanged directly between individual Local Water Utilities and regulators such as NSW Health and the NSW Environmental Protection Authority (EPA). While our insights are primarily anecdotal, we rely on expertise from other associations and agencies, including the Water Services Association of Australia, the Queensland Water Directorate, and various water utilities nationwide. It is important to emphasize that we represent local government-owned water utilities in regional NSW. Major utilities like Sydney Water, Hunter Water, and WaterNSW are not members of the NSW Water Directorate.

Our submission addressing the Terms of Reference of the Inquiry

(a) *the adequacy and extent of monitoring and data collection on PFAS levels in waterways and drinking water sources*

Water Directorate continues to support a risk-based approach to water quality monitoring, to ensure scarce resources are applied to the greatest risk. The advice of NSW Health² is:

The utility should assess risks, and if necessary, test for indicator organisms, pathogens, cyanobacteria, pesticides, disinfection byproducts, other organic compounds and radiological contamination.

And further, the advice of the NSW EPA is:

NSW Environment Protection Authority (EPA) has established a [PFAS investigation program](#) for prioritising sites around NSW where PFAS were used in significant quantities. Utilities should ensure that they have assessed the risk to drinking water from PFAS and include this in their drinking water management system. The water utility should engage the local PHU, the polluter and other relevant stakeholders. NSW Health recommends that all local water utilities undertake initial screening for PFAS. For local water utilities that have not tested for PFAS, NSW Health can arrange for testing of one sample of treated drinking water from each supply system.

The advice by NSW Health to undertake initial screening for all water supplies in NSW may uncover concerns with PFAS in regions of NSW that were not previously detected. PFAS, often called "forever chemicals" due to their resistance to environmental degradation, have been a contaminant of emerging concern (CEC) for years. Trace amounts of these chemicals can be found in surface and groundwater, with ongoing uncertainty about their long-term effects on human health and ecosystems.

The NSW Water Directorate welcomes support from NSW Health for initial screenings by Local Water Utilities. The results of these efforts are likely to necessitate ongoing regional monitoring programs, considering the resource-intensive nature of testing and quality assurance. Importantly, NSW and national authorities emphasize that drinking water meeting current standards remains safe, fostering trust in water quality management systems. Continuous support and collaboration among LWUs, NSW Health, and regulatory bodies will be essential to ensuring safe water supplies across regional NSW.

² NSW Health website: Water Utilities, accessed 1 November 2024. Available at: <https://www.health.nsw.gov.au/environment/water/Pages/water-utilities.aspx>

(b) the adequacy of the reporting and disclosure requirements to the public of monitoring and findings on PFAS contamination of water

NSW Health has actively supported PFAS testing and recommended public reporting of drinking water quality results, including the provision of a template for sharing routine monitoring. Currently, reporting and disclosure of water quality monitoring are not mandatory for local water utilities. The NSW Water Directorate supports NSW Health's recommendation that local water utilities should publicly report drinking water quality data and performance metrics.

(c) the identification of communities at risk from PFAS contamination

We acknowledge that NSW Environment Protection Authority (EPA) has established a [PFAS investigation program](#) for prioritising sites around NSW where PFAS were used in significant quantities. We strongly support the EPA continuing its investigations and continually updating its public advice on PFAS detection.

(d) the adequacy and effectiveness of government engagement with and support for communities disproportionately affected by PFAS contamination, including First Nations communities

Although not always timely, the Commonwealth and the NSW government have worked with local drinking water providers to address the impacts of PFAS contamination, for example at Wagga Wagga (Riverina Water)³.

The NSW Government has made a significant investment in improving water supplies to Aboriginal communities through the [Aboriginal Communities Water and Sewerage Program](#) (ACWSP):

The ACWSP provides ongoing support for service delivery, ensuring water and sewerage services continue to be operated and maintained at levels consistent with nearby non-Indigenous communities.

It is expected based on this policy statement that the ACWSP will investigate and manage PFAS impacts in the same manner as local water utilities.

(e) sources of exposure to PFAS, including through historic and current firefighting practices

The Queensland Water Directorate in partnership with Queensland water service providers shares a range of information on contaminants of emerging concern in water and wastewater⁴, referencing the work of the Green Science Policy Institute in the US⁵.

There are numerous exposure pathways for PFAS. According to the literature, PFAS can be found in:

³ Riverina Water website: *PFAS and your water*, accessed 1 Nov 2024, available at: <https://rwcc.nsw.gov.au/your-water/water-supply/pfas/>

⁴ Queensland Water Directorate website, <https://chemicalconcoctions.org/>, accessed 1 Nov 2024.

⁵ Green Science Policy Institute website: *PFAS*, accessed 1 Nov 2024, available at: <https://greensciencepolicy.org/our-work/pfas/>

- Firefighting foam
- Carpets and carpet cleaning products
- Food packaging
- Non-stick cookware
- Furnishings and car seats
- Cosmetics
- Outdoor gear, clothing and protective coatings
- Adhesives and sealants

While addressing PFAS in drinking water is essential, it is important to acknowledge the broader range of exposure pathways that contribute to environmental and human health risks. The NHMRC estimate that drinking water represents 2-3% of an average Australian's daily intake of PFOS and PFOA⁶ with 90% of total exposure estimated to come from sources other than drinking water⁷. Considering that the vast majority of Australians already consume water that meets both current and draft PFAS guidelines, and that over 90% of PFAS intake comes from non-drinking water sources, consumers may reasonably seek clarity on how governments are addressing this predominant exposure. Questions may also arise about the measures being implemented to regulate PFAS in non-food or beverage-related products—such as construction materials, paints, and electronics—that contribute significantly to environmental PFAS levels.

(f) the health, environmental, social, cultural and economic impacts of PFAS

We recognise the significant impacts of PFAS contamination near Australian Government defence sites⁸, including seven located in NSW. While this submission does not represent Hunter Water, we are aware of the profound community concerns and operational challenges associated with contamination near the RAAF base at Williamstown, which have directly affected Hunter Water's operations.

The NSW Environmental Protection Authority (EPA) has identified 51 investigation sites related to PFAS contamination, providing a baseline for understanding affected areas. Additionally, Friends of the Earth Australia has developed an Australian PFAS Chemicals Map⁹ documenting 244 references, including sampling sites, media references and other relevant data which highlights the widespread nature of the issue. Despite these efforts, there remains a significant gap regarding the full extent of PFAS impacts on drinking water across regional NSW. Addressing this requires a comprehensive, public-facing investigation by NSW regulatory agencies, with a focus on assessing and mitigating risks to drinking water systems.

Based on current research, the most effective treatment technology for PFAS includes activated carbon treatment, followed by incineration of the spent media to prevent further contamination. However, this solution presents challenges for regional NSW, as very few of the 380 town water

⁶ NHMRC, 241021, [Questions and Answers – NHMRC Review of per- and polyfluoroalkyl substances \(PFAS\) in Australian Drinking Water – public consultation – Question in 'About PFAS' section: Where does PFAS come from and how much of it comes from drinking water?](#)

⁷ NHMRC, 241021, [Questions and Answers – NHMRC Review of per- and polyfluoroalkyl substances \(PFAS\) in Australian Drinking Water – public consultation – Question in 'Human Health Effects of PFAS' section: How can I reduce my exposure to PFAS?](#)

⁸ Australian Government website: *PFAS management sites*, available at: <https://www.defence.gov.au/about/locations-property/pfas/pfas-management-sites>, accessed 1 Nov 2024

⁹ Available at: <https://pfas.australianmap.net/>

supply systems currently use activated carbon filtration. Implementing these upgrades could involve substantial costs, potentially running into hundreds of millions of dollars. Furthermore, given the proposed draft guidelines, it is expected that all water utilities will face additional costs associated with the increased testing and monitoring required. Whilst these increases may be modest for larger water utilities, smaller regional utilities are likely to face higher costs that need to be recovered via increases water bills and/or government support.

Given the uncertainties surrounding the scale of PFAS contamination and its associated risks, further investigations and clear communication from responsible agencies are essential. This would allow for targeted investments in treatment infrastructure and more informed decision-making to protect regional water supplies.

(g) the impacts, monitoring and mitigation of contamination on livestock, domestic animals and wildlife, including water birds, fish and other aquatic life

The Water Directorate's primary role is to support local water utilities; however, we also remain informed about relevant environmental studies concerning PFAS contamination. A notable example, reported by the ABC in August 2024, involved an "Australian-first" study investigating PFOS (a type of PFAS) in deceased platypuses collected from various eastern NSW rivers. The study spanned rivers from Bellingen on the north coast to Jindabyne in the alpine region.

The findings highlighted the bioaccumulation of PFAS in these mammals, underscoring the chemical's ability to persist in the environment and accumulate in the food chain. While the study did not pinpoint specific sources of the chemicals, it raised concerns about the broader environmental impacts of PFAS contamination on ecosystems, particularly in aquatic habitats.

These insights, while not directly linked to drinking water, provide valuable context for understanding the pervasive nature of PFAS and the importance of robust monitoring and mitigation efforts. They also reinforce the need for a coordinated response to address both human and environmental health risks.

(h) the structure, capacity, capability and resourcing of New South Wales Government agencies and water utilities to detect, monitor, report on, respond to and mitigate against PFAS contamination of water supplies, including the adequacy of infrastructure and resources

The Water Directorate recognises that NSW Health's Water Unit possesses the regulatory authority and expertise necessary to lead the coordination of monitoring and reporting on PFAS contamination. However, this capability can only be fully realised if the NSW government allocates sufficient resources and funding to support comprehensive investigations. Similarly, NSW DCCEEW holds the regulatory powers and oversight capacity for investment in water infrastructure across regional NSW. Ensuring that both agencies are adequately funded and resourced is essential for addressing the challenges posed by PFAS contamination effectively.

Regarding the adequacy of infrastructure, particularly for drinking water, we have previously highlighted in parliamentary submissions¹⁰ the urgent need for substantial investment—

¹⁰ Page 9 of the inquiry transcript:
<https://www.parliament.nsw.gov.au/ladocs/transcripts/3183/CORRECTED%20TRANSCRIPT%20->

estimated in the billions of dollars—to address water security, quality, and environmental risks. This funding is critical to modernize infrastructure and mitigate risks to communities across regional and metropolitan NSW.

As outlined earlier, it is important to maintain a balanced perspective on the diverse risks facing water utilities. While it is impossible to eliminate all risks entirely, a strategic approach that prioritises immediate threats, like PFAS contamination, and long-term infrastructure needs will yield the most effective outcomes for public health and environmental sustainability.

(i) the adequacy and effectiveness of New South Wales's legislative and regulatory framework in testing for, monitoring, mitigating and responding to PFAS contamination, including the adequacy of health-based guidance values, as compared to the standards and practices of other Australian and international jurisdictions

The Water Directorate and NSW local water utilities generally rely on the advice of NSW Health, NSW DCCEE and NSW EPA, and the National Health and Medical Research Council (NHMRC). The NHMRC recently announced a review of *PFAS in Australian drinking water*¹¹ with proposed lower health based guideline values. The NSW government has welcomed the proposed guidelines¹². The draft guidelines released by the NHMRC are an interim proposal and may change following further consultation and deliberation, with the final levels expected to be released in April 2025.

Whilst the NHMRC has conducted a thorough review of PFAS in drinking water, and the consultation process has been widely regarded as thorough and inclusive, it is essential to ensure that the adoption of new guideline limits is approached carefully and methodically. Hastily implementing changes could lead to unintended consequences, and further scrutiny of the review methodology may be warranted.

The Water Services Association of Australia (WSAA) has provided detailed feedback in its submission on the draft Australian Drinking Water Guidelines (ADWG) factsheet and the proposed guideline values. This feedback highlights the importance of measured decision-making. The key takeaway is that regardless of the contaminant of concern, changes to standards should not be rushed or influenced by media pressure. Instead, any updates should be based on jurisdiction-specific assessments, ensuring that they are practical, evidence-based, and reflective of local conditions. Whilst comparisons are often made with the US, our situation differs in Australia and several other countries have not followed the same approach (Please refer to WSAA's submission for their analysis).

[%208%20December%202023%20-%20Joint%20Select%20Committee%20on%20Protecting%20Local%20Water%20Utilities%20from%20Privatisation.pdf](#)

¹¹ NHMRC website: *NHMRC Review of PFAS in Australian drinking water*, available at:

<https://www.nhmrc.gov.au/health-advice/environmental-health/water/PFAS-review>, accessed 4/11/2024

¹² NSW DCCEE website: *NSW Government welcomes NHMRC proposed guidelines on drinking water and PFAS*, available at: <https://water.dppe.nsw.gov.au/news/nsw-government-welcomes-nhmrc-proposed-guidelines-on-drinking-water-and-pfas>

(j) public sector resourcing and coordination amongst relevant agencies in preventing controlling and managing the risks of PFAS to human health and the environment

Local water utilities, which are owned and operated by NSW local government, lack the necessary resources, expertise, and capacity to independently address the complex risks posed by PFAS contamination to human health and the environment. Effectively managing these risks will require significant funding, coordination, and leadership from responsible NSW government agencies.

The NSW Water Directorate emphasises that addressing PFAS risks requires a well-resourced, whole-of-government approach. This will ensure that local water utilities have the support necessary to protect public health and the environment while maintaining community trust in water quality and safety.

(k) international best practices for water treatment and filtration, and the environmentally sound management and safe disposal of PFAS

There are three primary water treatment technologies recognised internationally for effectively removing PFAS from water: reverse osmosis, ion exchange, and activated carbon filtration. In Australia, activated carbon has generally been the preferred approach due to its practicality and cost-effectiveness, coupled with the ability to incinerate the used carbon media, thereby safely managing the adsorbed PFAS. Three critical issues require careful consideration when adopting these technologies:

1. the management of PFAS laden waste,
2. how to safely return treated water to the environment, and
3. the substantial capital and operating costs associated with these treatment technologies.

The technology to treat PFAS contamination is available, but the central question remains: who bears the cost? It is clear that water utilities did not create the problem, and that the costs of treatment will be very high where PFAS is found.

(l) the effectiveness of remediation works on specific sites and international best practices for remediation and management of contaminated sites

The NSW Water Directorate is unable to answer this question.

(m) areas for reform, including legislative, regulatory, public health and other policy measures to prevent, control and manage the risks of PFAS in water supplies

We support the Water Services Association of Australia's (WSAA) position that source control of PFAS—preventing the chemicals from entering water sources—is the most effective, energy-efficient, and cost-effective approach to mitigating PFAS risks in water supplies. Effective source control minimises the need for expensive and resource-intensive treatment technologies, such as activated carbon or reverse osmosis, to remove PFAS from drinking water.

The Federal Government's decision to ban the production and importation of certain PFAS-containing products by July 2025 is an important step toward reducing environmental contamination. Tighter controls on the manufacturing and importation of PFAS-containing items will help limit the volume of these substances entering the environment. We strongly advocate

for continued collaboration between governments and industries to develop effective strategies for identifying and controlling PFAS at their source.

It is essential to emphasize the interconnectedness of water and wastewater treatment processes with other resource recovery and reuse systems, such as:

- return of treated wastewater to the environment
- recycling wastewater
- composting and recycling of biosolids.

Preventing PFAS from entering wastewater systems is critical to minimising human and environmental harm, as these substances can persist and accumulate across multiple cycles of reuse. Reducing PFAS inputs at the source is a vital step in protecting the integrity of all these interconnected processes.

(n) the impact of taking contaminated water sources offline on water security, including the effects of diverting water between communities; the social, economic and logistical implications of such diversions, and the challenges posed by PFAS contamination to water availability, drought management and emergency supply planning, and any other related matters.

Diversification of water supplies can be beneficial for many reasons, especially water security during drought. Attention needs to be paid to the water quality of alternative sources. Preliminary investigations of water quantity and quality are essential to confirm alternative sources are safe and reliable. Commencing these investigations during a drought or other emergency is not optimal and has led to poor investment in some cases.

In regional areas, the additional infrastructure required to access multiple water sources can impose significant financial burdens on local water utilities and communities. The NSW Productivity and Equality Commission in its *Review of funding models for local water utilities*¹³ highlighted concerns about affordability, particularly for smaller and economically disadvantaged communities.

Concluding comments

Thank you for the opportunity to make this submission. I can be contacted on _____ or _____ should you wish to discuss this submission.

Yours sincerely,

Brendan Guiney
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Water Directorate

¹³ NSW Productivity Commission, Final report July 2024, available at: <https://www.productivity.nsw.gov.au/sites/default/files/2024-07/20240725-review-of-funding-model-for-local-water-utilities-final-report.pdf>