Queensland Government

PFAS Contamination Protocol

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Prepared by: Queensland Government

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Contents

1. Introduction

This protocol applies only to Queensland Government agencies, and explains how Queensland government agencies will take reasonable and practicable measures to manage:

- legacy stocks of PFAS
- contamination that has been caused by the entity or which has originated from sites controlled by the entity.

The objective of this protocol is to ensure that the Queensland Government meets the same responsibilities and obligations as non-State entities. This protocol places an expectation on all Queensland Government agencies to model the actions that the Queensland Government expects of Commonwealth bodies and the private sector.

2. Background

Per and poly-fluoroalkyl substances (PFAS) are a group of manufactured chemicals which are resistant to heat, water and oil that have been used since the 1950s in a range of common household products and specialty applications. This includes application in non-stick cookware, fabric, furniture, carpet stain protection and food packaging. PFAS have also been previously used in industrial processes and in fire-fighting foams due to their unique and highly efficient properties.

There are many types of PFAS, with the best known examples being perfluorooctane sulfonate, known as “PFOS”, and perfluorooctanoic acid, known as “PFOA” and perfluorohexane sulfonate, known as “PFHxS”.

PFAS chemicals are broken down very slowly in the environment, persist for a long time in humans, animals and in the environment, and can travel long distances in surface and ground-water. While the environmental and health effects of exposure to PFASs are not fully understood, the potential for adverse health effects cannot be excluded and they are a listed under the Stockholm Convention. Because of this uncertainty, agreed national levels for these chemicals are based on a precautionary approach.

Consistent with this approach, and in response to emerging information, the Department of Environment and Science (previously the Department of Environment and Heritage Protection) as the State’s environmental regulator for the management of hazardous contaminants and pollution, has instituted a phase out of PFOS and PFOA firefighting foams and is taking compliance and enforcement action against private companies found to have caused contamination.

Land and water contamination associated with firefighting foam, as well as elevated PFAS levels in the blood of nearby residents, has led to inquiries into and investigations of Commonwealth Defence and Airport sites. RAAF Base Williamtown, the Oakey Army Aviation Centre and Gold Coast Airport are prominent examples.

Together with incidents such as the uncontained release of firefighting foam from the Qantas hangar at the Brisbane Airport, PFAS contamination and its implications for people and the environment has become a matter of significant public interest.

3. Context

Evidence to date shows that the chief cause of site specific PFAS contamination has been through intensive use and storage of firefighting foams containing PFAS that were used between the 1970s to the mid-2000s[1].

While this protocol refers to legacy PFAS stocks and contamination related to PFAS chemicals, until further evidence warrants, the primarily focus is on firefighting foam and associated wastes.

Agencies most likely to have responsibilities under this protocol include those who manage high risk fire emergencies (QFES fire stations and training facilities), own property where explosive fire risks exist (Ports) or may acquire and develop/disturb land where the aforementioned activities have taken place (Transport and Main Roads).

4. Key principles

The following principles will guide actions to identify and manage PFAS stocks and contamination at State-owned or controlled sites.

1. **Polluter pays principle**: Those who hold stocks or produce PFAS pollution should bear the costs of managing it to prevent damage to human health or the environment. This, together with the precautionary approach, is an underlying rationale for determining responsibilities and actions under the protocol.

2. **Precautionary approach**: A lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation or mitigating risks. Additionally, a lack of certainty about who is responsible for PFAS contamination on, or sourced from, State-controlled sites should likewise not be used as a reason for postponing measures to prevent environmental degradation or mitigating risks.

3. **Transparent and consultative**: Investigations and management actions will be open and transparent, clear and timely information will be provided to potentially affected communities.

4. **Collaborative:** Entities responsible for stocks and sites will engage with State environmental and health regulators, the inter-departmental committee and associated working groups—as well as any other relevant stakeholders—to seek guidance on investigations and management of risks.

5. **Inter-generational equity**: State Government response actions will be effective and aimed at taking all reasonable actions to prevent and/or minimise adverse legacy issues being inherited by future generations.

5. The responsible entity

For the purposes of the protocol, a responsible entity is the State agency that takes responsibility for identifying and managing PFAS stocks and contamination associated with a specific site.

State agencies are expected to self-identify as responsible entities. If there is any doubt about historical use or storage, agencies must undertake a full inventory in order to:

- determine where PFAS-related activities have taken place or are likely to have taken place, and the likelihood that chemicals were used, stored or spilled
- for any such activities, determine the potential exposure of the workforce, community and environment.

Where a site has legacy stocks and/or elevated PFAS levels and the original user cannot be readily identified or held responsible for investigating and managing potential pollution, the current owner/controller is the responsible entity for that site.

Where a State Agency is responsible for land affected by PFAS contamination caused by another identified party and that party (the polluter) is carrying out an investigation, the State Agency will take all reasonable actions to facilitate investigation on the State held land.

In the unlikely event that a dispute arises, the matter will be referred to the Inter-departmental Committee or to the Central Leadership Team for adjudication.

[1]Replacement foams are also fluorinated and the qualities of these are subject to further investigation.

6. Managing legacy stocks and contamination

The primary task of responsible entities is to take proactive and precautionary action, commensurate with the level of identified potential exposures, to:

a) phase out the use of PFAS chemicals
b) ensure that current and previous workers are supported with appropriate testing and counselling
c) investigate and minimise human and environmental exposure to PFAS chemicals.

Obligations associated with each of these is set out below.

a) Phase out the use of PFAS chemicals

In consultation with the environmental regulator, responsible entities must phase out the use of long chain fluorinated firefighting foams and replace them with safer products in accordance with the regulator's Operational Policy for the Environmental Management of Firefighting Foams.

Long-term storage of phased-out chemicals should be avoided as far as possible. Where storage is necessary, full measures must be installed, in consultation with the environmental regulator, to prevent spillage or escape to the environment. The costs associated with storage and disposal/destruction of phased-out foams must be borne by the responsible entity.

b) Ensure that current and previous workers are safe

Responsible entities will consult with staff and their representatives regarding any historical exposure and undertake remedial and counselling actions as appropriate.

c) Minimise human exposure to contamination and protect the environment.

Appendix A sets out the risk matrix developed by the Inter-departmental Committee

All actions and decisions taken by State agencies in responding to PFAS contamination should be consistent with national health risk assessment guidance on PFAS the National Environmental Management Plan for PFAS and where possible be aligned with Australia's obligations under the Stockholm Convention on persistent organic pollutants.

Responsible entities must undertake the following actions:

1. **If multiple sites exist, prioritise sites based on an assessment of potential human and environmental exposure**. In consultation with the Inter-departmental Committee and the environmental regulator, the responsible entity will develop a prioritised list of sites for further investigation and action.

2. **Undertake detailed investigation, assessment and risk management of at-risk sites.** In consultation with the Inter-departmental Committee, the responsible entity will carry out or commission an investigation consistent with State and National standards. Where contamination is likely and the associated risks warrant, the responsible entity will develop and implement a management plan to determine the potential human and environmental exposure along with appropriate mitigation and remediation measures.

   As part of this work the responsible entity will undertake the following measures to address risks:

   a) Characterise all contaminated source areas on-site in all relevant media.

   b) Identify pathways to external receptors and take samples along those pathways both on- and off-site as required.

      i. If elevated levels are detected on-site, possible pathways for distribution, particularly through surface and groundwater movement, should be identified and samples taken where practical along the pathway and at potentially affected receptors.
      ii. Samples must extend off-site and include biota (including edible species such as fish and crustacea) in the event that off-site contamination cannot be ruled out.

c) Community consultation

i. If elevated levels of contamination are detected off-site, the responsible entity has an obligation to advise and work with nearby residents and industries at risk of being on an exposure pathway.
ii. Before undertaking community liaison, responsible entities must consult with the environmental regulator and Queensland Heath
iii. In the unlikely event of very high exposure risks, responsible entities must undertake immediate actions to stop further exposure (e.g. though food advisories or provision of alternative water supplies for domestic or agricultural use).

d) Remediation

i. Where high ongoing exposure to humans and the environment is detected, responsible entities must undertake permanent remediation actions commensurate with the level of risk. These may include:

1) removing and lawfully disposing of contaminated material
2) immobilising the contaminant to prevent migration or leaching
3) storing contaminated soil or other material in a contained facility
4) filtering/treating water.

e) Management

i. Where complete remediation is not practicable, but the human and environmental exposure can be mitigated by management measures, the responsible entity must develop and implement an approved management plan that shall include:

1) acceptable uses of the site
2) management measures to protect human health and the environment, for example capping, stormwater control and decommissioning bores
3) monitoring and reporting requirements to ensure effectiveness of the measures.

7. Oversight and governance

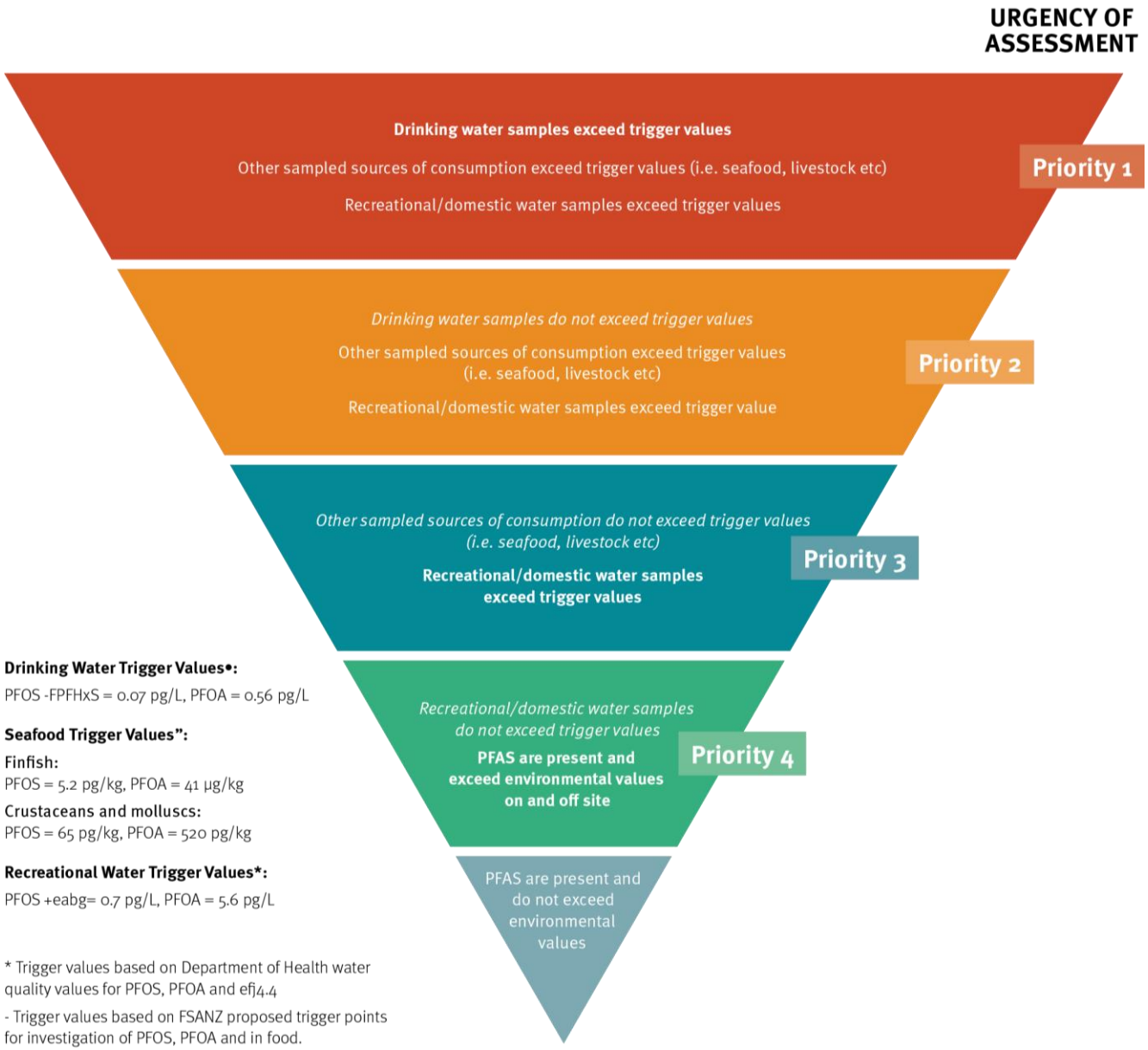
Responsibility for meeting the requirements of this protocol rests with the responsible entity's chief executive.

Responsible entities should consult with relevant State agencies—environment, health, agriculture and fisheries and natural resources—in undertaking actions under this protocol[2]. In particular, responsible entities will seek the advice of:

- the PFAS Technical Working Group—when prioritising sites (for further investigation); designing site investigations; reviewing the results of site investigations; determining priority risks and developing measures to manage risks.
- the PFAS Communications Working Group—when developing stakeholder engagement plans for particular sites.

[2]Contaminated land investigations must be undertaken by suitably qualified persons as prescribed under the *Environmental Protection Act 1994.*

Appendix A – PFAS Site Investigation Prioritisation Matrix



Appendix B – Definitions

Inter-departmental Working Committee (IDC) means the Inter-departmental Committee on Firefighting Foam Contamination.

State agencies are offices of the Queensland Government, including statutory authorities and other bodies created by legislation.