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Regulated waste testing for PFAS – meeting Queensland's updated thresholds

Background

A key principle of the general environmental duty under Queensland's *Environmental Protection Act* 1994 (the EP Act) is the effective characterisation of waste for potential contamination. The PFAS National Environmental Management Plan 2025 includes a general environmental requirement in Section 3.1 stating compliance through "ensuring proper disposal of PFAS-contaminated waste by properly characterising waste and sending it to a facility licensed to accept it."

Queensland's Environmental Protection Regulation 2019 (the EP Regulation) includes a risk-based waste classification framework where regulated waste is classified as either:

- Category 1 regulated waste (highest risk)
- Category 2 regulated waste (moderate risk)
- Not regulated waste / general waste (lowest risk).

The regulated waste classification provisions in the EP Regulation are used to identify and appropriately manage the risks associated with various wastes and related waste management activities. This manages scenarios where risks are not relevantly provided for a particular waste – affecting the registered producer or user as a resource acting in compliance with an approved end-of-waste (EOW) code under the Waste Reduction and Recycling Act 2011.

Waste generators are responsible for classifying their waste into a risk-based category by either:

- Adopting a default waste category from the EP Regulation (Schedule 9, Part 1), or
- Organising sampling and testing of their waste by an appropriately qualified person to demonstrate an appropriate risk-based category.

The EP Regulation now establishes thresholds for PFAS in not regulated waste, replacing the earlier zero-tolerance approach (Schedule 9, Part 3, Division 2). The regulation also states that contaminated soil from land recorded in the environmental management register or contaminated land register is not regulated waste (Schedule 9, Part 3, Division 1).

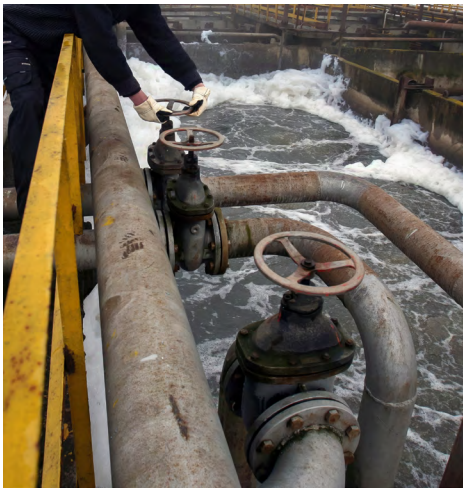
TABLE 1: Thresholds for PFAS classification (non-regulated waste)

PFAS category	Liquid waste threshold (µg/L)	Solid waste threshold (mg/kg)
PFAS total (excluding PFOS, PFHxS & PFOA)	0.01	0.004
PFOS + PFHxS (total)	0.002	0.002
PFOA	0.001	0.001

What this means:

- **At or above threshold** – waste that meets or exceeds the regulatory threshold remains classified as a category 1 regulated waste, requiring more stringent handling, treatment, transport, processing and disposal requirements in compliance with the EP Regulation.
- **Below threshold** – waste that fall below the regulatory threshold may be classified as not-regulated or general waste, provided testing is conducted under the correct





protocol and with current results. Although not regulated waste remains subject to general environmental duty under the EP Regulation, this classification allows for more flexible and broader handling and disposal options – reducing regulatory burdens, complexity and other associated costs. This can also be typified as 'common garden variety' commercial or industrial waste.

- **PFAS-specific consideration** – rather than previously defaulting to regulated waste classification due to potential minor PFAS content, the current provisions allow testing to determine whether threshold concentrations are exceeded. Waste may be categorised as low risk following confirmation from testing.
- **Contaminated soil** – management of contaminated soil is governed by the relevant provisions under both the EP Act and the EP Regulation.

What is 'PFAS total?'

Because the first criterion does not specify a particular PFAS species, PFAS total (excluding PFOS, PFHxS and PFOA) is calculated as the sum of all remaining PFAS analysed in a sample. This includes analytes from routine target suites (~30 analytes) and total oxidisable precursor assay where there is potential for perfluoroalkyl precursors to be present. In some cases, analysis of extended lists (~54 analytes), fluorotelomer alcohols, acrylates and acetates, and even ultra-short chain PFAS may be reasonably required.[1]

Schedule 19, Part 2 of the EP Regulation offers guidance by providing definitions for relevant substances that could "reasonably be expected to be present in the waste," giving regard to:

- The source, type and quality of materials involved in the generation of the waste
- The way in which the waste was generated.

Consequently, when selecting which analytes to test for, the potential sources of contamination and risk profile associated with the origin of the samples requires consideration.

For instance, applying broader testing suites may be beneficial in some of the following example scenarios:

- **Industrial liquid waste or solid waste from unknown sources** – include the broad suite as a screening tool together with TOP assay.
- **Landfill leachate** – include 5:3 FTCA (a landfill source indicating compound), PFCAs and potentially FTOHs and intermediates included in their biotransformation pathways (saturated and unsaturated n:2, n:3 FTCAs and 'secondary' sFTOH compounds).
- **Firefighting foam site investigations** – target fluorotelomer compounds including 6:2 FTAB, sulfonamides, and other precursors.
- **Water treatment discharge assessments** – include short-chain acids like TFA, PFPrA and PFMOAA.
- **Chrome and other electroplating waste** – test for ether sulfonic acids, including components of F53B, ie 11Cl-PF3OUdS and 9Cl-PF3ONS.
- **Groundwater near airports, industrial sites or defence facilities** – include compounds like PFECHS (from aircraft hydraulic fluid) and fluorinated ethers.
- **Biosolids and food packaging contaminated waste** – include disubstituted phosphate esters (diPAPs) and longer chain fluorotelomer carboxylic acids (FTCAs).
- **Waste containing IChEMS PFAS** – include targeted analysis of sulfonamides, diPAPs, FTOHs and fluorotelomer acrylates (FTACs), and low-level TOP assay.
- **Suspected precursors** – while not compatible with detection via a TOP Assay, their suspected transformation products – byproducts resulting from altering commercial compounds – are present in the broader testing suite (eg saturated and unsaturated fluorotelomer carboxylic acids).

New reporting options

ALS has updated its PFAS reporting options to include Queensland's updated threshold values, enabling clear

1 Difluoroacetic acid (DFA) is excluded from the calculation based on its categorisation as a non-PFAS under the OECD definition of PFAS.

compliance pathways under the EP Regulation. For liquid samples (eg water, leachate or effluent) super-trace or super-ultra-trace test methods (EP231X-ST/SUT) are essential, especially to meet the very low PFOA regulatory limit of 0.001 µg/L.

To ensure that results are calculated and reported in alignment with the regulation, please include the new codes below on chains of custody or analysis request documents:

- **PFAS QRLW** – PFAS Qld – Non-regulated thresholds for tested waste (liquids)
- **PFAS QRSW** – PFAS Qld – Non-regulated thresholds for tested waste (solids).

Note that the new codes correspond to calculations based on PFAS analytical data and should be requested in addition to the PFAS methods in your analytical testing plan. The LOR values assigned to the calculated parameters are based on the lowest LOR of the reported analytes, following the norm for environmental laboratory data reporting in Australia.[2]

No additional cost is charged for reporting of the new calculations, and no additional sampling containers are required.[3] Examples of how the new parameters appear on certificates of analysis are displayed below.

FIGURE 1: Example CoAs including the new PFAS parameters

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Work Order : ES2529138 Amendment 1
Client : AUSTRALIAN LABORATORY SERVICES
Project : Queensland Regulated Waste Testing

Analytical Results

Sub-Matrix: WASTE (Matrix: SOIL)				Sample ID	SP_23b
				Sampling date / time	17-Sep-2025 00:00
Compound	CAS Number	LOR	Unit	ES2529138-004	
				Result	
EP231 (calculations): Qld - Non-regulated thresholds for tested waste					
PFAS (total), other than PFOS, PFHxS or PFOA	----	0.0002	mg/kg	**0.833**	
PFOS and PFHxS (total)	----	0.0002	mg/kg	**0.0012**	
PFOA	335-67-1	0.0002	mg/kg	**0.0003**	

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Work Order : ES2529138 Amendment 1
Client : AUSTRALIAN LABORATORY SERVICES
Project : Queensland Regulated Waste Testing

Analytical Results

Sub-Matrix: TRADE WASTE (Matrix: WATER)				Sample ID	TW-2a
				Sampling date / time	18-Sep-2025 00:00
Compound	CAS Number	LOR	Unit	ES2529138-002	
				Result	
EP231 (calculations): Qld - Non-regulated thresholds for tested waste					
PFAS (total), other than PFOS, PFHxS or PFOA	----	0.0005	µg/L	**102**	
PFOS and PFHxS (total)	----	0.0002	µg/L	**0.421**	
PFOA	335-67-1	0.0005	µg/L	**0.0099**	

2 LORs for analytes used to calculate the sum may be greater than the reported LOR values for the sum, or the regulated waste thresholds. For instance, the summed LOR for "PFOS and PFHxS (total)" is nominally set at the lower LOR of the two contributing PFAS, ie the PFOS LOR is adopted to ensure trace PFOS detections are incorporated into the summed parameter. LORs for individual PFAS are based on what is readily achievable using state-of-the-art analytical procedures.

3 For water samples, the larger 125 mL container option should be selected to facilitate the lowest detection limits possible.

Get in touch with us

By aligning our PFAS reporting with Queensland's regulatory framework – including the newly defined thresholds – we deliver trusted insights that drive confident compliance and risk assessment strategies.

Contact us today about selecting the optimal PFAS testing suite to best support your project's environmental and regulatory needs.

Brisbane ALSEnviro.Brisbane@alsglobal.com
Sydney ALSEnviro.Sydney@alsglobal.com
Melbourne ALSEnviro.Melbourne@alsglobal.com
Perth ALSEnviro.Perth@alsglobal.com
New Zealand ALSEnviro.Hamilton@alsglobal.com